A MAJOR STREET AND HIGHWAY PLAN
for the
CHAMPAIGN - URBANA AREA

AUGUST 1960

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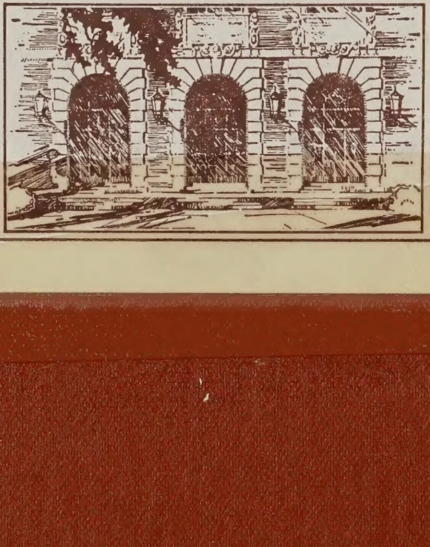

Joseph M. Heikoff

A MAJOR STREET AND HIGHWAY PLAN
FOR THE
CHAMPAIGN-URBANA URBAN AREA

PREPARED FOR
DEPARTMENT OF PUBLIC WORKS AND BUILDINGS
THE DIVISION OF HIGHWAYS
STATE OF ILLINOIS

IN COOPERATION WITH
UNITED STATES DEPARTMENT OF COMMERCE
THE BUREAU OF PUBLIC ROADS

BY

HARLAND BARTHOLOMEW AND ASSOCIATES
ST. LOUIS, MISSOURI

JOSEPH W. GUYTON, Project Manager
AUGUST, 1960

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August, 1960

Mr. E. A. Rosenstone, Director
Department of Public Works and Buildings
State of Illinois
Division of Highways
Springfield, Illinois

Dear Mr. Rosenstone:

We are pleased to submit herewith our report, a Major Street and Highway Plan for the Champaign-Urbana Urban Area, as prepared under your directive dated December 3, 1959. The plan presented was developed to adequately accommodate anticipated vehicular volumes by the year 1980. The determination of 1980 levels of traffic is based upon the origin and destination and other traffic data gathered by the Illinois Division of Highways, together with additional facts gathered throughout the course of our studies.

A program of periodic development to obtain a street and highway system has been proposed and comprehensive cost estimates have been prepared to aid in the development of the proposed plan. Maximum benefit will derive to all interested agencies and to the public if the analyses and recommendations included in this report are completely understood by all levels of interested persons.

It is emphasized that the proposed street and highway system is a balanced system and is completely dependent one part upon the other. These major streets and highways are incapable of recognizing their difference in category as to obligation for provision or maintenance. The same high degree of cooperation and coordination among the governmental agencies involved which has maintained in the past must continue into the future as this street and highway plan is implemented. The local governmental agencies can do much to assist in the implementation of this plan without gross expenditure of funds if they will adopt and utilize the plan herein transmitted in the approval of future subdivisions as the Champaign-Urbana Urban Area grows. With the public owning the necessary rights-of-way, the level of street surface may be continually improved commensurate with development until the maximum level required is realized.

It has been the pleasure of this firm to work in Champaign-Urbana over the last few decades in a number of areas of planning and engineering. The following studies and reports have been made:

Preliminary City Plan (including Major Street Plan) - 1926
Parking in Champaign Business Districts - 1953
Land Use and Zoning Studies - 1956
Supplemental Parking Study - 1958

The background provided by these studies was found to be particularly useful in this study of the Champaign-Urbana urban area.

During the course of the entire study, maximum liaison was maintained with all levels of government and all interested groups. Meetings were held both individually and jointly and in both the community itself, as well as in Springfield, with representatives of the following groups:

Champaign County
City of Urbana
City of Champaign
University of Illinois
Urbana Association of Commerce
Champaign Chamber of Commerce

The nature of these meetings was such that the procedures being utilized, the philosophies being utilized, and the alternatives being considered were made available to these groups. In addition, these groups provided us with a compilation of the various improvements which they had under consideration and which they wished us to consider and evaluate. Our recommendations in our report reflect careful consideration of these many suggestions. The study also involved a number of review meetings with the Illinois Division of Highways' District personnel, as well as the U. S. Bureau of Public Roads at both the Regional and Division levels.

Three research projects current at the University of Illinois and sponsored by the Illinois Division of Highways and U. S. Bureau of Public Roads proved to be of significant assistance in this study. Conversely, it is believed that this study was able to make available to each of these projects useful information and data.

We wish to acknowledge the excellent cooperation extended by the several agencies of the Illinois Division of Highways, the Cities of Champaign and Urbana, the University of Illinois, and Champaign County officials.

Very truly yours,

HARLAND BARTHOLOMEW AND ASSOCIATES

By

Wm. S. Pollard, Jr.

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SUMMARY

This report presents a detailed analysis of the street and highway requirements for the Champaign-Urbana Urban Area through the year 1980 and the recommendation of a major street and highway plan through which those needs can be met.

The development of the proposed plan is based upon detailed studies of anticipated increases in population, land use and vehicular travel in and through this urban area. The major street and highway plan proposed is that which, in our opinion, will best serve the needs of all persons involved.

The proposed location of marked routes within the urban area is primarily determined from a consideration of economics and traffic service in view of the fact that the vast majority of the traffic on those routes will be destined for the urban area. The provision of the interstate routes to the west and north of the urban area adequately will provide the required facilities for bypassing through traffic volumes around the area. Specific route locations were given considerable study, and details of consideration are presented herein. An estimated $5,164,000 will be required to develop these proposed federal aid primary routes to standards commensurate with the current policy of the Illinois Division of Highways. This expenditure is in addition to current planning to provide portions of FAI 57, FAI 74 and the Decatur Expressway extending to the west from the urban area.

Two supplementary volumes were prepared in addition to this report. One of these is a comprehensive technical report on the findings and the procedures utilized in the analyses. It includes details of the preparation of cost estimates for the proposed improvements. The second volume consists of a series of work maps developed during the study and providing supplementary data of primary interest to the technician.

INTRODUCTION

The efficiency of the transportation system of a community determines to a large degree its economic well-being. Unless the movement of persons and commodities can be accomplished with efficiency, safety, and convenience, the economic growth of an urban area can be seriously impaired or even retarded. In recent decades the primary transportation system for most communities has shifted from railroads to highways and airways. This report constitutes a plan for guidance in the development of a major street and highway system for the Champaign-Urbana Urban Area for traffic needs for the next 20 years.

The street and highway system is the key to expeditious movement of persons and goods by motor vehicle. A very large proportion of all local movements in Champaign and Urbana takes place by means of automobiles and trucks. Commodities moving from home to work and to places of business or recreation are made over the street system. It is to the economic and social well-being of the area that these movements occur with minimum delay, congestion or hazard.

In recent years motor vehicle volumes have increased at such rapid rates that essentially every community is experiencing difficulties in providing adequate facilities for existing traffic. If communities are to keep pace with the demands created by the rapid growth of urban areas in the past decade, as well as that anticipated in the near future, it is mandatory that a plan be adopted for guidance in providing a well-coordinated, adequate, and economical major street system. In Champaign-Urbana this problem, as well as the requirement for a plan, is magnified by the factor of different governmental agencies in some instances exercising jurisdiction over separate but adjacent lands and, in others, overlapping areas. Coordination is of prime importance in this matter — Champaign should not adopt one plan, Urbana a second, and the University of Illinois a third if they do desire to provide an economical and efficient transportation system. All agencies — local, county and state — must know and coordinate with planning involving the others.

Desirably, the major street and highway plan should be designed as a coordinated component of a comprehensive plan — not as an isolated entity. A highly desirable supplement, beyond the scope of this report but normally a part of the comprehensive plan, is subdivision regulations. Traffic volumes will be affected by the location of population and commercial and industrial enterprises in the future. Neither Champaign nor Urbana have adopted a comprehensive plan for development of the area; thus maximum liaison has been maintained during the course of these studies with those officials in positions which will influence future development.

The plan proposed in this report is necessarily long range. However, programming of the plan should be such that each year's efforts are directed towards a specific set of contributory improvements rather than toward random improvements which produce little over-all relief.

MAJOR STREET PLANNING PRINCIPLES

LEVELS OF SERVICE

Champaign and Urbana were both laid out long before the advent of the motor vehicle and its resulting shift of transportation emphasis. Champaign was originally developed as a railroad terminal for the area, and its central business district street pattern reflects such in that it parallels the railroad. At such early times there was little appreciation for or need of different categories of streets and highways, and all streets were designed similarly.

Experience in various cities throughout the United States has indicated that traffic can best be accommodated by developing relatively few streets with wide pavement widths and generally straight alignment. Such streets have traffic control devices arranged to favor traffic flow and actually carry the majority of vehicular travel. These streets, which have become known as "major streets," typically accommodate 80 percent of a community's traffic on a coordinated system involving only about 20 percent of the total street mileage.

With only a few streets accommodating the major portion of the traffic, the remaining streets can be improved with a narrower, less expensive pavement, particularly where the majority of them are residential. These minor streets need not have direct alignments because their major function is land service. In addition, by developing a system of major and minor streets, greater safety is provided, traffic is accommodated better, and residential areas are protected.

In a typical suburban development the major streets are located approximately one mile apart thus forming crude mile-square areas of development. Criss-crossing this area are collector streets at the half-mile points. These minor streets need not have direct alignment and serve to direct internal traffic to the major street network. This same mile-square area is also approximately that necessary to support an elementary school for typical suburban densities. Ideally, the school should be located near the center of the area, off the major street network, and served by the collector streets. Often a gain in public land utilization can be effected by the joint use of land possible in combining a neighborhood park with the school site.

Major Streets

The major streets of a community should be designed as a coordinated network of streets connecting all residential areas with the primary traffic generators — recreational areas, business areas, industrial areas, and other places of employment. There are several types of major street systems which are generally employed in various degrees and combinations to make up the network of streets for a particular community. One such system, often referred to as "radial," might be visualized as comparable to the spokes of a wheel and is best adapted to an urban area in which the major traffic generators are concentrated at a central section of the area. This central area is quite comparable to the hub of the wheel in the previous analogy.

Still other major streets should be provided to permit traffic to skirt the central business area, areas of intense congestion, or even the entire city. These latter streets are called "circumferential" routes and often are employed with radial streets to form one type of network.

Champaign-Urbana, however, has evolved with a basic street network on a gridiron basis. This is the type network, possibly with only minor alterations or exceptions, that the majority of cities of comparable size in the United States now employ. In it are elements of both radial and circumferential routes.

Often the basic gridiron pattern is skewed or canted in order to parallel a river, or, as in the case of Champaign, a major railroad. Such a system, superimposed upon a basic north-south and east-west gridiron, often forms complicated street intersections and presents difficulties to traffic movement.

Within the general term of "major street" there are numerous and varied terms applied to categorize the streets even further. Certain terms are applied towards legal definitions and others towards defining maintenance responsibilities or levels of service, while others connote function. It is not the purpose of this report to debate relative merits of any particular set of names for so categorizing major streets, but in order to avoid confusion, this report is written in terms of two levels of major streets. These are referred to as Primary Arterials and Secondary Arterials.

Primary Arterials. Just as most of a city's traffic is carried on major streets, it is recognized that the majority of this major street traffic is concentrated on relatively few major streets. These streets are referred to as primary arterials and are the high level streets ranging from freeways and expressways to multi-lane facilities providing access at all intersecting streets.

Secondary Arterials. Within the heart of a city the necessity for more major streets is realized and a system of second level arterials should be provided. These usually are not as wide and extensive as the primary major streets but nevertheless carry substantial volumes of traffic and, therefore, must connect and terminate on primary arterials.

Minor Streets

The minor streets in a community should be designed primarily to serve the abutting property. They should be indirect in alignment and the pavement width should be relatively narrow to discourage through or fast traffic. In residential areas curvilinear streets, cul-de-sacs and courts have been effective in protecting the area from heavy traffic. These basic minor streets need only have 28 to 30 feet of paved width, which is ample for parking and traffic flow in residential reas. Additional pavement width is only a needless expense and a waste of land.

Of course, some minor streets will act as collectors to gather traffic from other minor streets and direct it to the nearest major street for safe and expeditious movement to its destination. As such, collector streets should provide for two lanes of traffic and two parking lanes, a total of 36 to 40 feet of paved width.

PURPOSE OF PLANNING

In view of the dependency of the public on a good transportation system for the movement of goods and persons, it is mandatory that such a system be adequate not only for present needs but also to meet anticipated future requirements. The usual planning period is 20 years, with the qualification that periodic reviews should be made approximately every 5 to 10 years. In planning for a 20-year period one should realize that all contemplated improvements must be programmed according to demand and that certain planning requirements, of necessity, are for needs beyond the 20-year period designated.

Thus a major planning principle is that provisions be made for street and highway improvements in order that when the need arises the opportunity for improvement does indeed exist. This makes mandatory the pre-obtainment of rights-of-way properly located to allow the improvements which will ultimately be required. Conversely, the plan enables designation of minor streets with the resulting savings where wide rights-of-way are not required.

It is not the purpose of a major street plan to present a glorified version of "what this community could have been if someone years ago had been farsighted enough to so design it." The major street plan must embody the practical elements of improvement necessary to adequately meet the anticipated traffic requirements in that community plus those details of good planning necessary to present a pleasing, economical and efficient street network. Maximum possible advantage of the existing facilities must be realized.

It is important to emphasize that the entire urban area should plan its development cooperatively. There are numerous examples of items which could have been corrected if a sound plan had been adopted and followed. Some of these are listed below:

1. The Washington Street offset at Neil Street in downtown Champaign.
2. The development of Wright Street as a major street over part of its length, while continuation to the south past the University of Illinois Campus is essentially impossible.
3. The development of elementary schools on major streets instead of the desirable condition of development within the sectors of land created by the major street network.
4. Development of adequate right-of-way widths throughout the length of a major street. An example of a major street which has many sections of inadequate right-of-way is Kirby-Florida Avenue.
5. The development of a street-naming program which would eliminate the undesirable feature of multiple names for the same continuous street—e.g., Kirby-Florida, Washington - Beslin - Fairview, Church - Main, Springfield-Main.

Where a major street plan does not exist, or if it exists and is not followed, streets tend to become major by "use" as determined by the public to meet their immediate desires, rather than by an orderly development which can provide greatest long-range economy. Obviously, such development is not always sound.

The following of a good major street plan, of which the public is cognizant, simplifies the advancement of the city in that it enables the population to know which streets will be developed as major arterials. This provides a desirable stability to neighborhoods and a peace of mind for individuals residing in such neighborhoods. This also enables proper planning of other phases of city growth, such as schools, parks, industrial areas, etc. By having a sound major street plan, the city insures that provision for future growth has been made without unduly burdening the general public for future street improvements. Obviously, the major street plan should be closely coordinated with other phases of a comprehensive plan for the development of the community. Although it is a major component of a comprehensive plan, it cannot replace or substitute for a sound comprehensive plan.

Previous Plans for Champaign-Urbana

A search of existing records indicates that two previous major street and highway plans were prepared for either or both the Cities of Champaign and Urbana. One of these plans, a component of a comprehensive plan for the City of Champaign, was prepared by Harland Bartholomew and Associates in 1926. The second plan was a component of a comprehensive plan for the Champaign-Urbana area prepared by Swanson and Associates in 1950. Many of the undesirable features of the existing major street network could have been alleviated if such plans had indeed been followed. Some of the recommendations of the 1926 report by Harland Bartholomew and Associates, later reiterated in the Swanson report, are again proposed for development to effect a sound major street network for the Champaign-Urban area. If such proposals had been followed initially, not only would there have been a saving in initial construction costs, but also countless economies would have been realized by the motoring public in terms of added convenience and reduced travel costs.

PHILOSOPHY OF APPROACH

Application of Principles

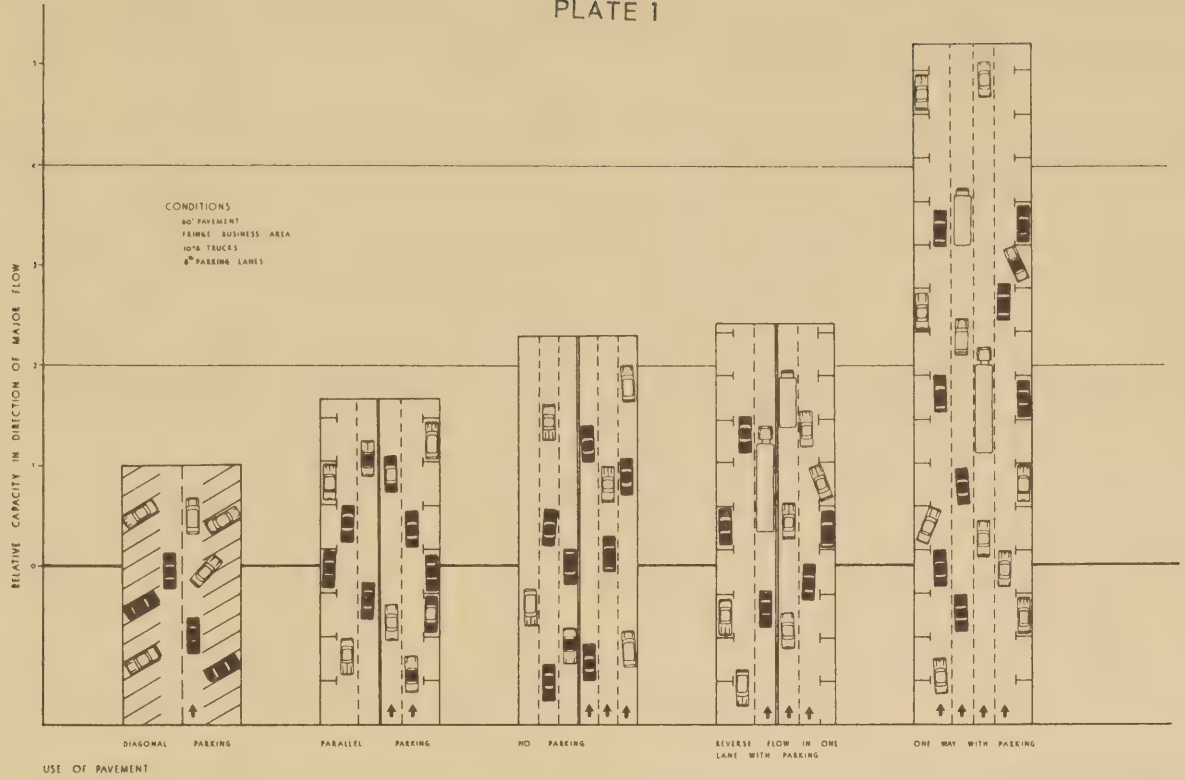
In designing a major street plan for any community, there are certain basic principles which must be recognized and generally followed. With particular reference to the Champaign-Urbana Urban Area, there is a basic street framework which represents an investment of millions of dollars in its development over the years. Maximum advantage must be taken of this existing system of streets and highways in providing for future traffic service and land service requirements of the area.

From a practical viewpoint, it is necessary that certain principles be adhered to as closely as possible, whereas others **must** be met in the development of the major street network. For instance, it is necessary that a traffic service requirement be met in planning the major street network for the design year. However, the meeting of this traffic requirement can be accomplished by several different means. One obvious approach, just as obviously uneconomical, would be to develop a street essentially under every desire line of traffic as anticipated to exist by 1980. Each such street would then lead from the origin of the desire to its destination providing a direct routing for that desire. In all practicality, this cannot be done — a certain degree of grouping must be made of these traffic desires, and planning then can be adjusted to provide the necessary laneages of streets. In the grouping, study must be made during the analysis to insure that a major need for a radial has not been overlooked.

There are certain other requirements for streets to provide continuity or aesthetical values which have less priority than the traffic requirements. Basic principles guiding the location of major streets indicate the desirability to route "through" traffic around congested areas. Through traffic as herein used means traffic which does not desire to go to a particular district but is routed through that area due to its origin and destination. Good planning enables this traffic to circumvent the district and thus minimize delay and congestion. Examples of these congested areas are the cities themselves, central business districts, and major industrial areas.

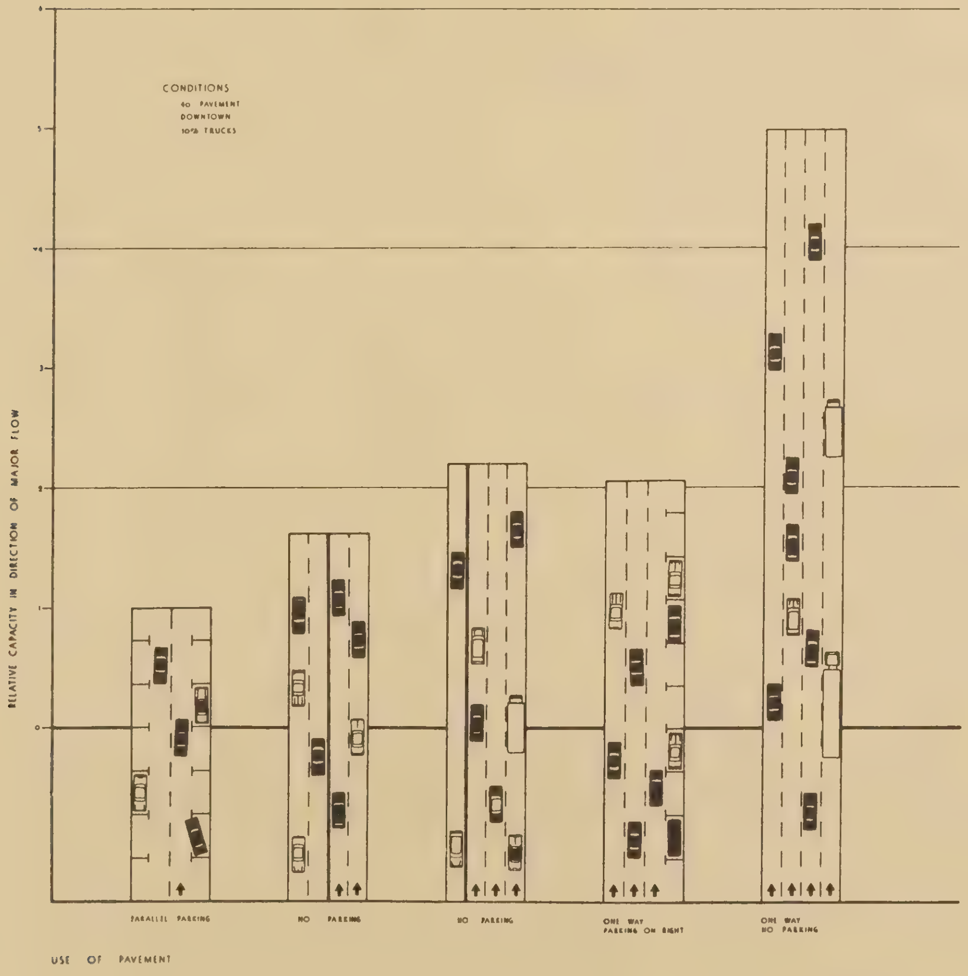
It is most desirable that major streets carrying traffic to central business districts route this traffic directly to off-street parking areas. However, major generators or foci for traffic

PLATE 1



CAPACITY POTENTIAL – 60' STREET

HARLAND BARTHOLOMEW AND ASSOCIATES
CITY PLANNERS CIVIL ENGINEERS LANDSCAPE ARCHITECTS
SAINT LOUIS 1960 MISSOURI

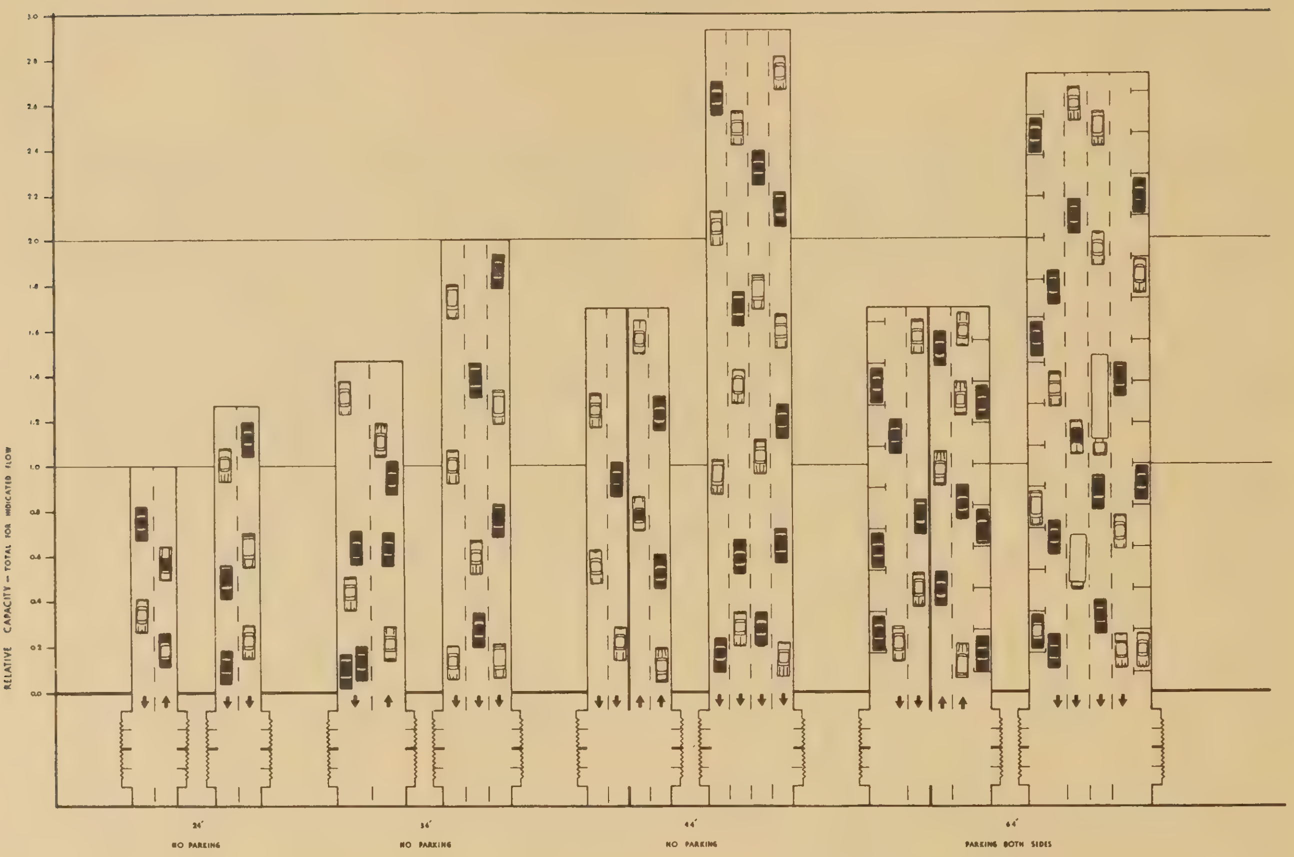


CAPACITY POTENTIAL – 40' STREET

GRAPHIC SCALE IN FEET
0 10 20 40

HARLAND BARTHOLOMEW AND ASSOCIATES
CITY PLANNERS CIVIL ENGINEERS LANDSCAPE ARCHITECTS
SAINT LOUIS 1960 MISSOURI

PLATE 2



CAPACITY–ONE WAY VS TWO WAY STREETS

CONDITIONS ASSUMED

DOWNTOWN AREA
NO BUS STOP
20% TURNING
10% TRUCKS

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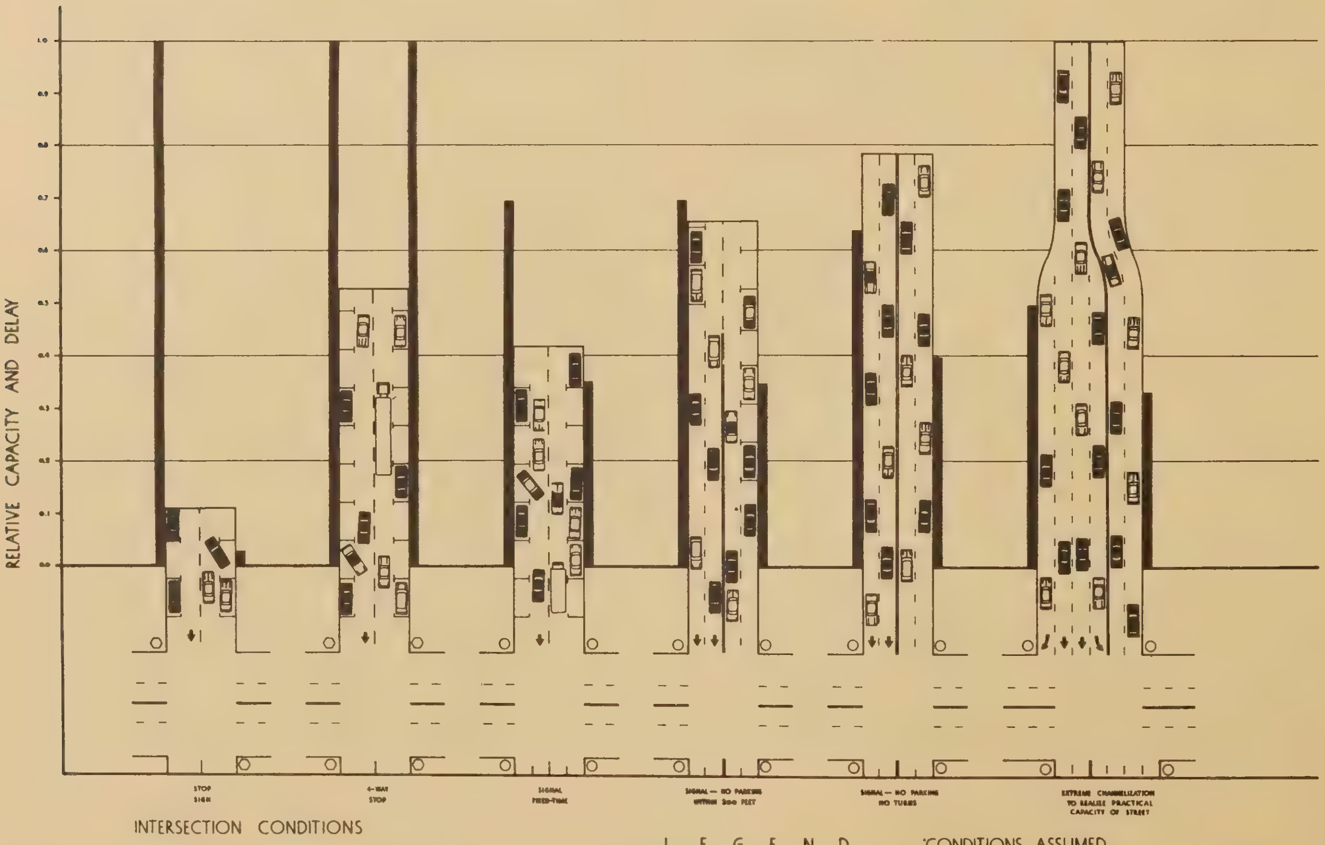
PLATE 3



L E G E N D

▬ AVERAGE DELAY FOR STREET
▬ AVERAGE DELAY FOR CROSS STREET

LENGTH OF STREET INDICATES RELATIVE CAPACITY WITH CROSS STREET VOLUME CONSTANT

CONDITIONS ASSUMED

60' STREET WITH PARKING
40' STREET AS INDICATED
NO BUS STOPS
10% TRUCKS

INTERSECTION CAPACITY AND DELAY

HARLAND BARTHOLOMEW AND ASSOCIATES
CITY PLANNERS, CIVIL ENGINEERS, LANDSCAPE ARCHITECTS
SAINT LOUIS, MISSOURI

ideally should be located adjacent to a major street.

Of necessity, the major street plan must consider development potential beyond the design year, but it is also emphasized that it is unnecessary to build to the planned standards immediately. Interested persons should know where eventual improvements will be effected. Thus by understanding the plan and realizing where and approximately when widenings will be caused to occur, planning can now take place to eliminate such irretrievable damage to the property values and general appearance of the community as is generally associated with widening programs. The desire of this proposal is to provide the opportunity to meet future requirements with the minimum expenditure of not only money but also those intangible items associated with the beauty and economy of a city.

To provide a maximum return for monies spent in the development of a sound major street network, maximum utilization must be made of the existing street system. This dictates that unless there is a very heavy traffic requirement for a major radial, the basic plan should primarily consist of development of the existing street pattern. In order to make maximum use of the existing pavements, detailed consideration must be given to the possible development of one-way couples, either in the immediate future or in the distant future when traffic so demands. This dictates that detailed consideration be given to the means in which the capacity of a given street can be increased.

Street Capacity

Considerable efforts and literally volumes of data have been devoted to street capacities for various conditions. A summarization of this data is necessary for study relative to a major street network for a community. As such, the important frame of reference is relative capacity rather than detailed, "exact" capacity such as is used in studying a specific intersection.

Two basic characteristics of street capacity which are often improperly perceived relate to a major street's over-all capacity and to the relationship of capacity and delay.

The first of these concerns the fact that a major street's over-all capacity, i.e. the volume which it is capable of passing along a given section of the street in a unit of time, is dependent upon many variables but is primarily controlled over the length of a city street by the intersections.

Generally, such items as parking restrictions or parking arrangements, lane widths, truck volumes, etc., affect the capacity of the street with regard to utilization of the pavement width, whereas the means by which access is provided forms a second category of variables. This category is primarily divided into two types of access provision, one is the at-grade intersection and the second is the grade-separated crossing with access being provided by various types of ramps.

Plate 1 illustrates the relative hourly capacity potential of a section of a street which can be realized merely by changing the utilization of the paved width. For the purposes of this illustration, a 60-foot pavement has been assumed with urban conditions prevailing. As indicated to the far left in the plate, with diagonal parking permitted on the street a relative capacity of 1.0 is obtained. Merely by changing the parking from diagonal to parallel (and thus providing two lanes of travel in each direction), the relative capacity can be increased by approximately 70 percent. The removal of parking altogether causes a realization of approximately 2.3 times the relative capacity of the original street where diagonal parking was permitted. Similarly, almost the same capacity increase is realized by utilizing an extra lane for flow in the predominant direction during the peak hour. By converting to one-way operation with parking, the relative capacity of the street in that direction is five times as great as the original consideration. This also provides an increase of approximately 130 percent over two-way operation without parking, but one must consider that this is for flow in the predominant direction.

A similar comparison is made for a 40-foot street in Plate 1. In addition, relative capacity is indicated for a one-way street with parking on one side only and without parking. Again it is emphasized that the relative capacities are for the predominant direction of flow as indicated by the arrows.

Plate 2 indicates the relative capacities of various streets utilized for one-way and two-way operation. In this illustration consideration is given for the total street flow through an intersection. Thus for two-way streets the indicated capacity includes both directions of travel. Each street is related to the capacity of a two-way 24-foot pavement. Thus it is indicated that a 36-foot street, for instance, utilized as one way has approximately twice the capacity of a two-way, 24-foot pavement or 38 percent more capacity than a two-way, 36-foot street. Generally, conversion of two-way streets to one-way streets provides a capacity increase of approximately 35 percent in addition to minimizing delay and accident potential at intersections. For purposes of the illustration, cross-street volumes were kept constant.

The previous illustrations indicate the potential street capacity of a pavement without real consideration being given to the effect of access to the street. A minimum reduction in these capacities is caused when access is provided by ramp connections as generally utilized in various forms on toll roads and the interstate routes. However, in urban areas there are numerous at-grade intersections which greatly reduce the capacities discussed previously. It is this reduction which deserves careful consideration herein. In discussing intersection capacities, however, one must also consider the effect of delay and its relationship to capacity. Two similar streets having the same capacity will impress the motoring public as being vastly different if one invokes much greater delay than the other.

Plate 3 illustrates the relative capacity of a given 40-foot street with respect to various conditions at an intersection with another given street. The cross-street volume is kept constant in the example. Those conditions indicated in the plate vary from a stop sign on the street under consideration to complete channelization of the intersection in order to realize the maximum capacity of the street. The capacity realized in the final illustration is that same capacity indicated as 1.0 in the illustration for a 40-foot pavement in Plate 1.

In addition to indicating capacity, Plate 3 depicts the average delay experienced on the street under consideration and the average delay on the cross street. The cross-street volume is kept constant throughout each of the individual illustrations within the plate to provide a fair comparison. Note in particular that as capacity increases, in most instances, the delay is decreased. However, there is one particular exception which should be noted. The utilization of a four-way stop at the intersection, although it does provide slightly greater capacity, also provides much greater delay than is experienced with a fixed time signal or with other signals. It is basically for this reason that many designers and planners dislike the utilization of the four-way stop as a means of intersection traffic control.

In preparing a major street plan for a given community, every effort should be made to utilize the inherent capacity of the existing street system. There are numerous means available for providing additional capacity, some of which are relatively inexpensive, while others can be quite costly. In order to provide a concise summarization of these means available, listed below is an outline of different means of acquiring additional capacity with relative advantages and disadvantages of each. There are essentially two groupings. One consists of increased capacity through traffic control means and should be utilized to its maximum, while the other category involves construction.

CAPACITY INCREASING MEASURES

I. Traffic Control Measures	**Advantages**	**Disadvantages**
A. Progressive fixed time signalization	1. Low cost	1. Provides minimal increase in capacity normally
	2. Easily installed	2. Interconnection desirable
	3. Long-range flexibility	3. Not flexible for two-way streets
B. Flashing signals, off-peak	1. Low cost	1. Doesn't aid major street peak hour needs
	2. Aids cross street needs	
C. Interconnection with multi-dial controller	1. Relatively low cost	1. Provides minimal increase in capacity
	2. Some flexibility on two-way streets	2. Often difficult to obtain good progression for two-way streets
D. Volume density controllers	1. Provides best adaptation to flow changes	1. Most costly of signalization means
	2. Most capacity for "as is" conditions	2. Cannot provide gross increases in capacity
E. Reverse lanes	1. Low cost possible	1. Requires high degree of public information
	2. Provides high capacity increases	2. Can be expensive
		3. Requires at least 4 lanes initially
F. Parking restrictions	1. Low cost	1. Requires strict enforcement
	2. Provides high capacity increases	2. May not add appreciably to intersection capacity
G. One-way couples	1. Low cost	1. Some circuity
	2. Maximum utilization of pavement width possible	2. Requires a pair of nearby similar streets
	3. Easy to obtain progression	3. Streets should be connected at each end of couple
	4. Provides increased intersection capacities	
H. Turn restrictions	1. Low cost	1. Requires enforcement
	2. Easily installed	2. Shifts the problem — doesn't solve it
	3. Can effectively increase capacity	3. Often only minimal relief provided

II. Construction	**Advantages**	**Disadvantages**
A. Intersection treatments	1. Less costly construction than over-all widening	1. Does not provide "safety factor" of natural gapping between intersections
	2. Better utilization of pavement widths between blocks	2. On wider streets calls for very large intersection areas
	3. Reduce right-of-way requirements between blocks	
B. Widening	1. Can provide large capacity increases	1. Most costly means — often prohibitive
	2. Does permit natural gapping between intersection	2. Aesthetics

The cornerstone of a major street plan is, therefore, the existing street system. The key to the adequacy or inadequacy of the existing major street system is a relating of its capacity to the demands of motor vehicular traffic at the design year. The over-all degree of accuracy of analysis involved therefore becomes that necessary to insure that there will not be a difference in the requirement for traffic lanes. There will necessarily be, in addition to direct needs for traffic lanes to meet the anticipated vehicular volumes, a requirement for certain streets or laneages from a planning or land service viewpoint. This differentiation between a traffic call and a planning call is made in this report.

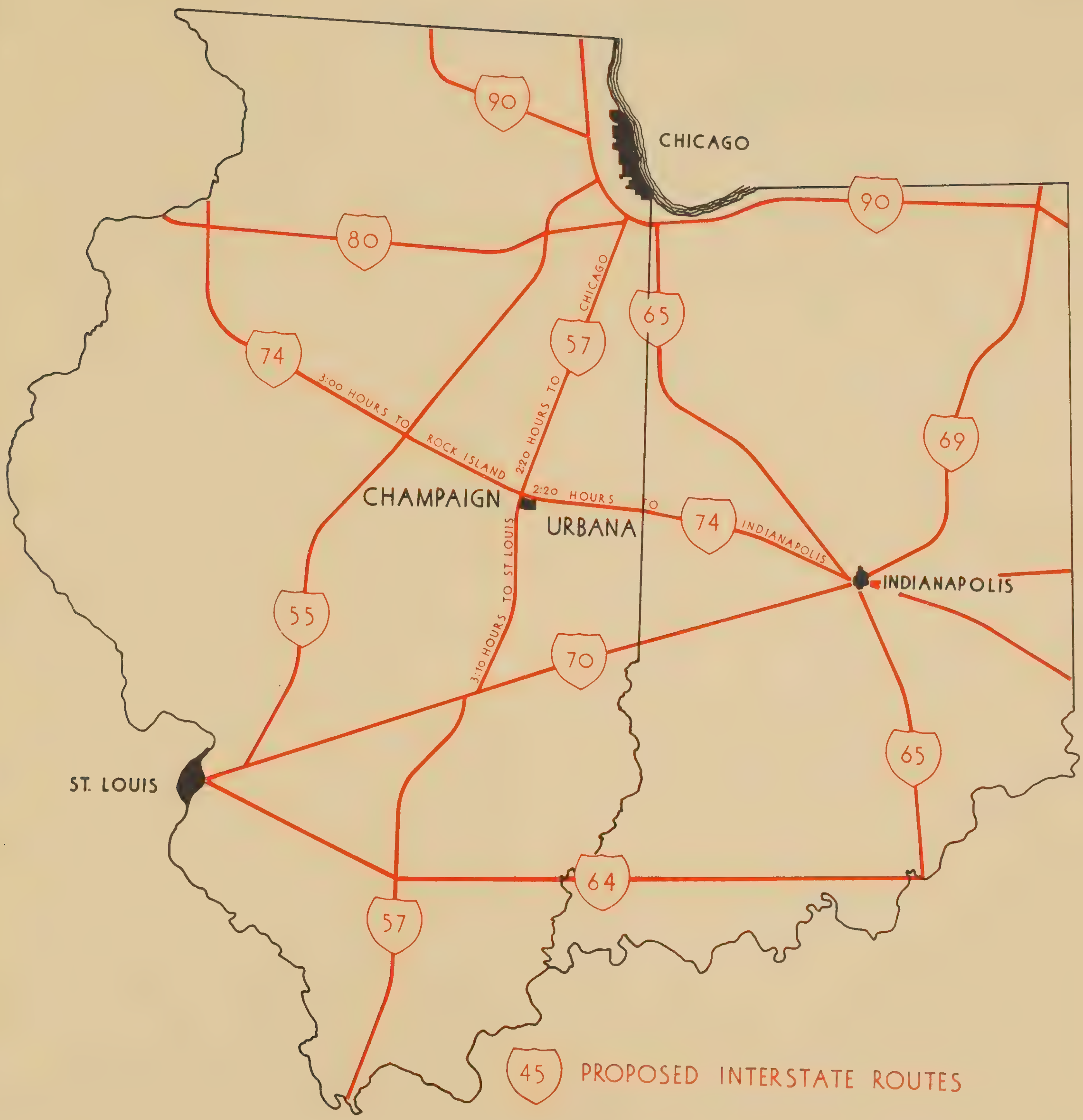
The over-all philosophy utilized in this study for the Champaign-Urbana Area basically acknowledges several important items which should be emphasized. The major street principle (i.e., the principle of developing some streets to a higher level than others) is essentially one of great economy for those involved in that it minimizes expenditures for street developments. In a community in which there is no formal recognition of a major street network through an existing plan, the adoption of a major street plan conceivably will "hurt" some property owners. Such "hurt" is minimized by adopting a plan and adhering to it. Everyone in a community is "hurt" to a much greater degree if a major street system is not recognized and developed. Past experience indicates that when adequate provisions are not made for anticipated traffic, that traffic will be forced to utilize existing facilities, often quite capriciously, with a resulting detriment to the area. Ignoring the need merely amplifies tangible and intangible costs.

Many components of a major street plan are necessarily quite long range in that they are designed to enable meeting the foreseeable traffic requirements. A maximum return for the monies involved can be realized by following three basic guides:

1. Utilize existing streets to the maximum extent practicable.
2. Construct where and when necessary.
3. Acquire right-of-way for future construction needs as soon as it is practical, ideally concurrent with new development of land.

The important item or end result of a study such as this is that the communities involved adopt and follow a plan for the development of their streets. The plan presented in this report is that which, in our opinion, is best suited for all persons and agencies in the area involved.

PLATE 4



GEOGRAPHIC LOCATION
CHAMPAIGN–URBANA URBAN AREA
STATE OF ILLINOIS

HARLAND BARTHOLOMEW AND ASSOCIATES
CITY PLANNERS, CIVIL ENGINEERS, LANDSCAPE ARCHITECTS
SAINT LOUIS, 1960 MISSOURI

EXISTING CONDITIONS

EXISTING CONDITIONS

Champaign-Urbana is basically a three-centered complex involving the City of Champaign, the City of Urbana and the University of Illinois. It is advantageously located within the State of Illinois in that the proposed construction of Interstate Routes 57 and 74 will intersect to the northwest of this metropolitan area and will greatly reduce travel time between it and the other major foci within the State of Illinois and the surrounding region. This relationship is indicated in Plate 4 which depicts the States of Illinois and Indiana with the general location of interstate routes within them. The Champaign-Urbana Urban Area is approximately centered with reference to three very large midwestern urban complexes. It is located 140 miles south of Chicago and equi-distant from Indianapolis with a current driving time to St. Louis of approximately 4½ hours. The completion of the interstate routes will reduce travel time to these areas considerably. Estimated travel times via the proposed interstate routes to various points are indicated in Plate 4. For instance, travel time to St. Louis will be reduced to 3 hours and 10 minutes.

Champaign-Urbana is the largest metropolitan area within approximately a 75-mile radius and is well situated with respect to major transportation facilities. Champaign-Urbana is on the main line of the Illinois Central Railroad and on the Wabash and New York Central Railroad lines. Major highway facilities currently traversing the cities are U. S. Routes 45 and 150 and Illinois State Primary Route 10. In addition to these and the interstate routes, an expressway is proposed for construction from Champaign to Decatur with eventual extensions to the west. Several truck lines, inter-city bus lines and a municipal bus system provide highway transportation services for the area. Air transportation facilities are available through two airports. The Illini Airport (Private) is located just north of Urbana, and the University of Illinois Airport is located four miles south of Champaign on U. S. 45. Commercial air traffic is handled through the University of Illinois Airport, where Ozark Airlines provides daily routings to other major cities in the State and region.

These facts, plus the outstanding high economy of the area place the Champaign-Urbana Urban Area in a unique position for rapid growth in the foreseeable future.

Economy of the Area

According to statistics compiled by the Champaign Chamber of Commerce, Champaign-Urbana, while ranking sixth in population in the State of Illinois, has the highest per family income for the State and the second highest income per capita. Nationally, Champaign-Urbana metropolitan county ranks fourth in per family income. Champaign County is part of the extremely rich agricultural area in central Illinois, and Champaign-Urbana serves as a retail trade center, shipping center, and food processing center for the surrounding agricultural region. As such, Champaign-Urbana has a labor drawing area of approximately 30 miles radius, which extends beyond Champaign County and into adjacent counties. The estimated labor force in Champaign-Urbana in 1959 was 26,500 persons, of which approximately 7,200 were academic or non-academic employees of the University of Illinois. This compares to an estimated industrial employment of 3,800 in 1959 in both Champaign and Urbana.

Although the greatest single employer and generator of population growth is the University of Illinois, Champaign-Urbana's economic face is diversified. Industries in Champaign and Urbana are generally modest in size and range from the manufacture of such products as gloves, bleachers, soy bean oil, road machinery, concrete products, and academic apparel to the more complex production of such items as alloy castings, dairy products and electrical equipment. Chanute Air Force Base, the third largest in the United States, is located just 14 miles north of Urbana on U. S. Route 45.

During recent years there has been a marked trend towards the location of new industries in this area. Yet the primary generator of traffic within the Champaign-Urbana Urban Area remains the University of Illinois. It is anticipated that student enrollment in September of 1960 will reach 22,500, a new high. Short courses, sporting events and other programs at the University attract over 150,000 visitors per year. The assembly hall now under construction will add greatly to the attractiveness of the University and create more trippages into the area in the future. Even though approximately 28,000 persons in this urban area can be directly attributed to the University of Illinois, the influence of this institution on the economy of Champaign-Urbana cannot be over emphasized. It is greatly due to the stabilizing influence of the University that past growth of the communities has been somewhat constant and that the generally high economy of the area has been relatively stable.

Prior to 1955 the percentage of land devoted to heavy industry within the area was extremely small compared to the average for communities of this size. The recent trend toward industrialization seems to indicate a realization of the opportunities for certain types of industries to locate in this type of area where they can associate themselves with the attractive cultural and educational facilities available.

Major Street Network

This system is essentially a gridiron pattern. Some of the predominant characteristics are enumerated below:

1. There are relatively few streets providing continuity across both cities. Those now providing good continuity are:
    a. University Avenue
    b. Springfield Avenue — Main Street
    c. Green Street
    d. Florida-Kirby Avenue
2. Many streets are discontinuous or have severe jogs or misalignments.
3. Very few streets have adequate right-of-way for their entire length in order to serve as a primary arterial. The one notable exception to this, University Avenue, is actually too narrow for optimum use in a few areas.
4. Very few streets have paved widths enabling utilization to four lanes of traffic.

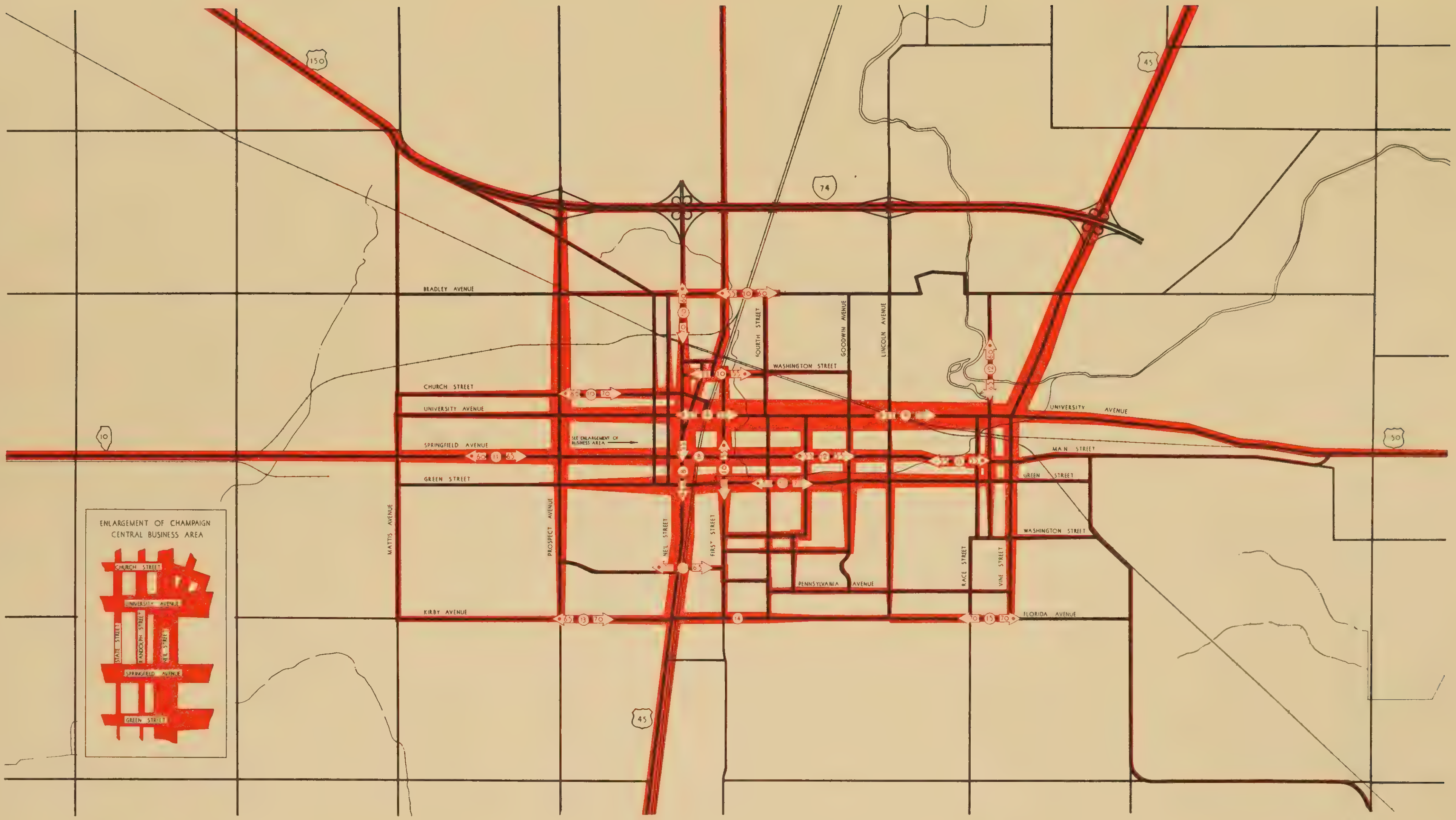
It is most unfortunate that, in addition to the previous examples, there are also many instances in Champaign-Urbana where elementary schools have been located on existing major streets. As was indicated previously, elementary schools desirably should be located on minor streets which provide continuity with the major street network surrounding in order to enable persons to get to the schools, but such schools should not be located on the primary arterials. It is partly due to the lack of an over-all major street plan that this condition has occurred in Champaign-Urbana. Every effort should be made to minimize the number of streets being utilized as major streets and to develop those retained to the degree necessary to carry anticipated traffic.

Plate 5 indicates the 1959 24-hour traffic volumes in excess of 2000 for the major streets in Champaign-Urbana. Peaking characteristics for an average day are also depicted in this plate at certain check points. Indicated at these points are the peak-hour volumes as percentages of the 24-hour volume by the number within the circle. For instance, 12 percent is indicated on Springfield Avenue near Wright Street. In addition, the directional distribution for both the morning and evening peak hours is indicated.

There are several outstanding features of the existing flow data which should be recognized. University Avenue, one of the few streets which traverses both cities, has the highest 24-hour traffic flow during a typical day. In one section which adequately provides only two lanes of traffic there is a 24-hour flow of 17,000 vehicles. The maximum flow on University Avenue is in the vicinity of Wright Street where the indicated volume is 19,900 vehicles per day.

The existing portion of Interstate 74 to the north of Champaign and Urbana carries approximately 6,600 vehicles per day. However, it must be recognized that part of this flow in the future will not be able to utilize the interstate route as easily as it now does. At the present time vehicular traffic has access to the

PLATE 5



1959 24 HOUR VOLUMES

CHAMPAIGN-URBANA URBAN AREA

STATE OF ILLINOIS

L E G E N D

- ⑩ PEAK HOUR AS PERCENT OF 24 HOUR VOLUME
- ⇨ DIRECTION OF PREDOMINANT FLOW, A.M.
- ⇨ DIRECTION OF PREDOMINANT FLOW, P.M.
- ⇨ PERCENT OF PEAK HOUR FLOW IN PREDOMINANT DIRECTION

10,000 20,000
24 HOUR VOLUME

NOTE: VOLUMES LESS THAN 2,000 ARE NOT INDICATED

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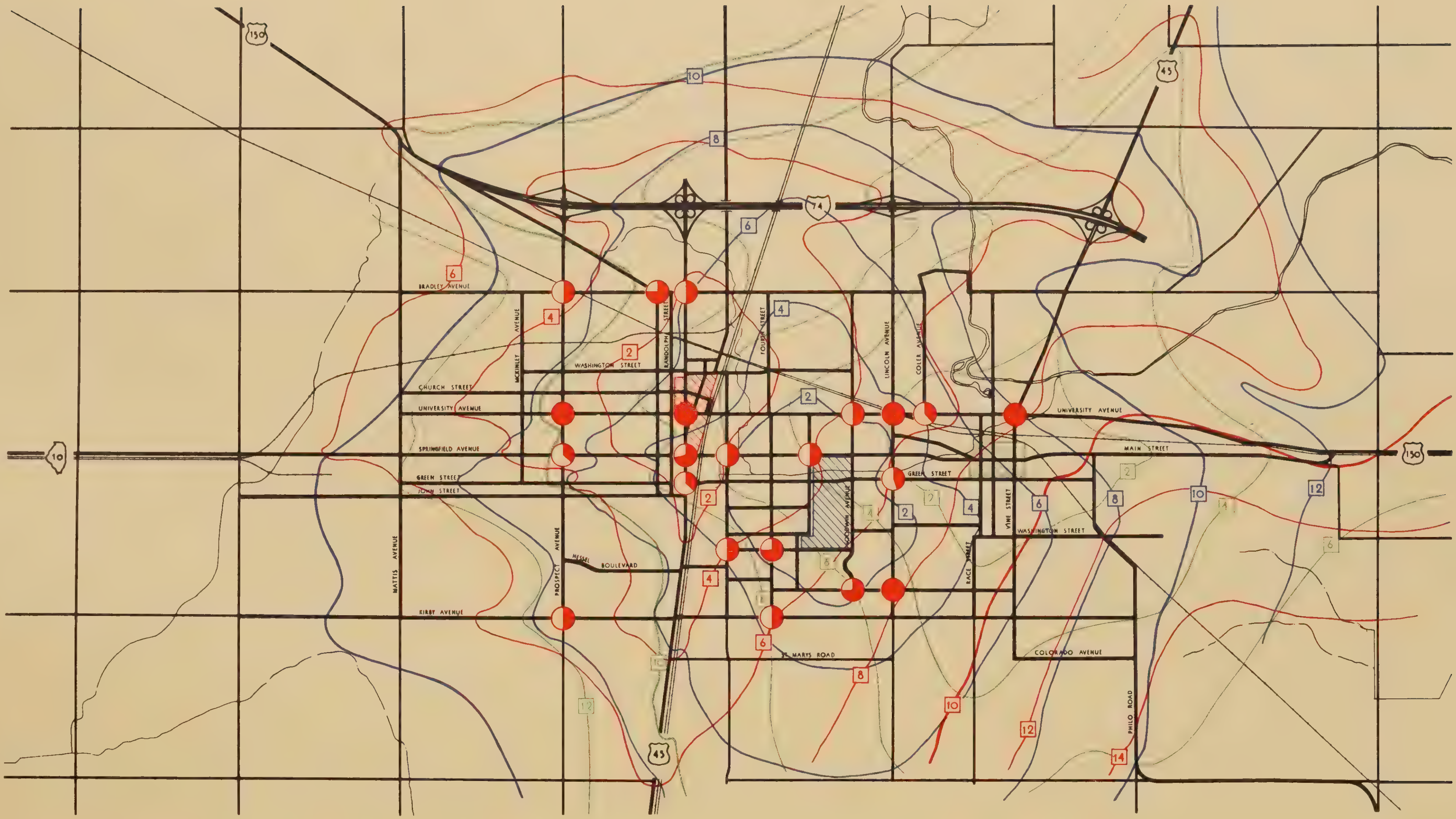
SAINT LOUIS APRIL 1960 MISSOURI

PLATE 6



TRAVEL TIME AND DELAY

CHAMPAIGN-URBANA URBAN AREA

STATE OF ILLINOIS

L E G E N D

▨ CENTRAL AREA

6 TIME IN MINUTES FROM ORIGIN AREA

AVERAGE DELAY AT INTERSECTIONS
WHEN MORE THAN 15 SECONDS

◐ 30 SECONDS

◕ 45 SECONDS

● 60 SECONDS OR GREATER

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interstate near the junction of Route U. S. 150 and Mattis Avenue. In the final design as the interstate routes are now planned there will not be an access point on Interstate 74 west of Mattis Avenue for approximately 8 miles other than that provided from Interstate 57. This interchange will not provide local access to the interstate routes.

Plate 5 indicates 24-hour flow data and the normal peaking characteristics. There are certain abnormal flows due to football games or other large University functions which must be considered. An example of these conditions indicates that during the peak hour of the 1959 homecoming football game the flow on Kirby Avenue at the Illinois Central Railroad was approximately 17.5 percent of the resulting 24-hour flow. This contrasts to a peak-hour flow of 13.5 percent on a normal day. The relationship of actual peak-hour volume of traffic is 1400 for the football rush hour compared to 925 for the estimated peak-hour flow during normal conditions.

For a typical city the peak hour of the average day occurs in the afternoon. This is demonstrated as being true in the Champaign-Urbana area also. However, volumes observed during the noon hour are unusually high. In some instances they are even greater than the volumes during the morning peak hour. The over-all city-wide average peak hour is approximately 9.3 percent of the 24-hour flow. However, one must consider that for different portions of the city this over-all average varies to a great degree, in some instances being as high as 15 percent. Directional distribution factors also vary considerably.

Plate 6 indicates the results of a time and delay study which was performed with the assistance of the Champaign Chamber of Commerce, the Urbana Association of Commerce, and University of Illinois staff personnel. This plate portrays approximate driving time from the three major foci during a typical spring afternoon peak hour in 1960. In addition, at various key intersections delay in seconds is portrayed for stops averaging over 15 seconds. Normally when delays exceed 30 seconds it is considered that the traffic volume has exceeded the practical capacity of the point in question.

As indicated in Plate 6, travel time from the Champaign central business district to outlying areas is approximately 15 minutes during the peak hour. This is also true for travel from the Urbana central business district to the outlying areas. From the University of Illinois to outlying areas the distance can be traversed in approximately 11 minutes. Based upon these data it is estimated that at the present time average travel speeds through the central area approximate 20 miles per hour while in fringe areas average travel speeds are about 25 miles per hour. It is obvious from the delays indicated at certain intersections that immediate attention is needed at some of these locations. A comparison of accident data and the delay plate indicates that many of the intersections experiencing high delay also have had high accident records during the past two years. The accident records indicate that the Champaign-Urbana Urban Area has had only three fatalities during the past two years. However, the large number of some types of accidents at various intersections also indicates that immediate attention should be directed toward alleviating these.

In order to plan extensions to the existing major street network, one must also include as part of the existing network those improvements which are impending or developed to the degree that they are essentially under construction at the present time. There are several such projects under way in Champaign-Urbana and these have been assumed as part of the existing network of streets. These improvements are outlined below:

1. **Neil Street.** The Illinois Division of Highways let a contract for widening Neil Street from the interchange with I-74 to a point just south of the Illinois Central Railroad track spur in 1960. This is being widened to two 22-foot pavements plus a 4-foot median.
2. **Green Street.** Plans have been made for improvement in the vicinity of the University of Illinois and will probably take place in the summer of 1961. This is to be a widening and inclusion of a median

from Wright Street to Lincoln Avenue.

3. **Lincoln Avenue.** From the Wabash-New York Central Railroad tracks north to the Interstate, Lincoln Avenue is planned for development as a 44-foot pavement.

4. **Interstate Routes.** The location of FAI 57 and unconstructed portions of FAI 74 are essentially fixed and were assumed thus for the purpose of this study.

5. **Decatur Expressway.** The location of the Decatur Expressway west of Champaign was assumed fixed. As part of this study, however, detailed consideration was given to the connection of the Decatur Expressway to the Champaign-Urbana major street network.

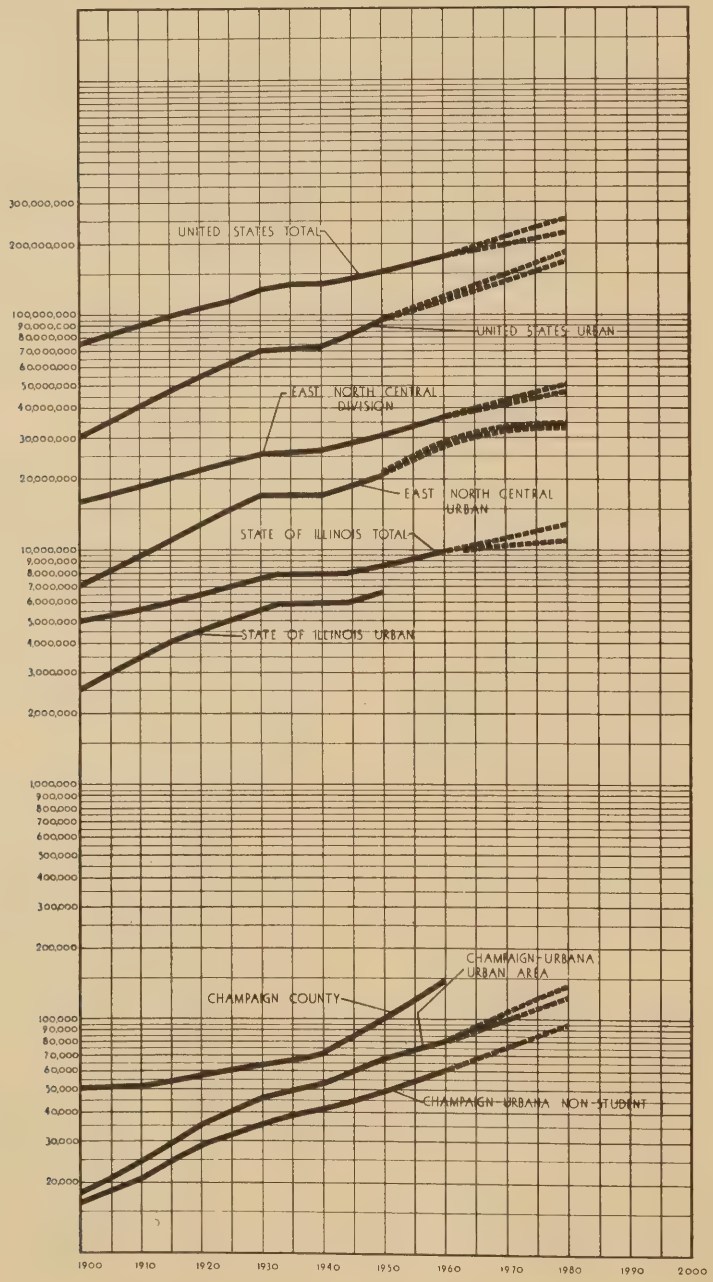

PLATE 7

POPULATION GROWTH

FUTURE REQUIREMENTS

The 20-year planning period selected is that period which is typical for studies of this type. An initial phase of study is to estimate the future requirements for the area in terms of traffic flow. This is primarily based upon a projection of the dependent items of population, land use, motor vehicle registrations, and motor vehicle travel. Because these items are so interdependent each is somewhat determined by what the other will be and thus one might project each one with consideration for the others. In most instances, the first projection involves a determination of what the population growth is expected to be, followed by a placing of those persons into the land about the community into which it is most likely that new development will occur. From this a determination is made of the future vehicular travel, which is the basis for the preparation of the major street plan.

Urban growth may occur at varying rates for any particular community. The rate of growth is dependent upon many factors, any one of which may aid or arrest the development of the area. A city grows or fails to grow primarily because of its role in the economy and culture of the surrounding region. Included in this role are the relationships to surrounding districts, portions of the state, other adjoining states, and even the nation as a whole. Because of their effects on transportation, the interstate highways themselves will influence the amount and direction of growth. Past economic trends and their effects on local conditions are reflected in past growth and present extent of development of a community. Thus an examination of growth trends and an appraisal of local employment, industry, and commerce aids in evaluating the potential for future growth.

POPULATION PROJECTION

The estimating of future population for a growing metropolitan area can be accomplished through numerous techniques. Practically all of the techniques depend heavily upon guidance from past population growth trends and comparisons with regional and national trends and projections. In addition, careful consideration of economic potentiality of the area must be given. It is important to realize that the Champaign-Urbana area is not an average community in that it involves a three-centered complex. To a great degree there are unique opportunities to direct population growth in this area due to the influence of the University of Illinois.

Growth Trends

The Champaign-Urbana Urban Area comprises nearly 60 percent of the population of Champaign County. Historically, Champaign-Urbana has grown at a rate somewhat greater than that experienced by Illinois or the East North Central census district in which it is located. The growth rate for this urban area has very closely approxmiated that of urban United States, especially during the past decade.

Plate 7 indicates the population trends for Champaign-Urbana and various other areas since 1900 with projections to 1980. Population statistics for Champaign-Urbana have been compiled to provide graphical representation of the non-student population as well as the total urban area population from 1900 to 1950 with estimates to 1960. The Champaign County population for this same period also has been indicated, but adjustments have not been made for it to reflect the difference in population statistics enumerated after 1950. (Prior to 1950 the county population does not include Chanute Air Force Base Personnel or University students.) The projections for Illinois, the East North Central Division, and the United States are based on projections made by the Bureau of Census assuming high and medium rates of fertility. The estimates of urban populations were based on projections of current trends in the urban and rural proportions.

A most salient fact indicated by these data is the relatively constant, high growth rate for the Champaign-Urbana area. This rate has been quite comparable to the urban United States' rate in recent years. Champaign-Urbana's growth since 1950 has been approximately 26 percent as has the urban United States'. In 1920 the Champaign-Urbana Urban

Area population, excluding University students, was 28,300. Since then population has increased by approximately 183 percent to approximately 80,000 in 1959. During the same period the urban United States' population increased only by 120 percent. In recent years, however, growth of the University of Illinois has tended to level compared to annual growth since the first of the century. Over-all, the non-student population has been relatively constant as a percentage of urban United States, whereas the entire Champaign-Urbana Urban Area population has indicated a tendency to increase as a percentage of urban United States. These relationships are indicated in the table below:

CHAMPAIGN-URBANA POPULATION

Percent of Urban United States

Year	Non-Student	Urban Area
1920	.053	.066
1930	.052	.068
1940	.054	.071
1950	.056	.076
1950*	.052	.070

*Based on new census definitions of urban population and resulting total urban United States' population.

Projected Growth

Future population growth for this metropolitan area will relate to a great degree to growth of the University of Illinois. On a policy basis the University officials are in a position to somewhat control this future growth. For example, a gross reduction in entrance standards could lead to a growth completely disproportionate to the growth pattern which has been experienced during the past decades. Changes in basic tuition charges or the addition of branches of the University in other cities could also affect the rate of growth in the Champaign-Urbana community of the University. Predetermination of these items through the next 20 years is impossible; however, maximum guidance has been sought from those officials in a position to influence this policy. Thus the future growth of the Champaign-Urbana area has been predicted with due consideration for the anticipated increased enrollment at the University of Illinois.

The indications are that by 1980 the University of Illinois could very conceivably enroll 45,000 students on the Champaign-Urbana campus. Considering the 1959 enrollment of just over 20,000 students, this indicates that the student enrollment will increase by 125 percent. These figures are based primarily upon the assumption that the University will continue to provide facilities to meet the increased demands for education as indicated by the currently high birth rate and is in agreement with current thinking of University officials.

The non-student population trends portrayed in Plate 7 and projected to the year 1980 follow a growth pattern very closely approximating the national trend of the urban United States. The growth rate is somewhat higher than that for the typical Illinois or midwestern community due to the aforementioned influence of the University, its anticipated high growth rate, and the extreme likelihood of increased attraction of industrial facilities in the area. In view of these factors, projections were prepared to the year 1980 with Champaign-Urbana urban population representing approximately .074 percent of the urban United States. Considering the non-student population only, projections indicate it will be .053 percent of urban United States, in close agreement with past trend data. These projected population figures are indicated on Plate 7 with the growth trends. With the total Champaign-Urbana population projection to 1980 a second, lower line has been included. This line depicts the population growth that would be experienced if the growth rate of the 1950's were merely extended and not accelerated. In view of the anticipated University growth this lower limit appears unreasonable for depicting total urban population. However, the projection of the non-student population closely follows such a projection technique.

Based upon all of these factors, the estimated population for 1980 for the Champaign-Urbana Urban Area is 140,000, or an increase of approximately 60,000 persons. Included is an estimated 45,000 total student enrollment at the University. This population increase for Champaign-Urbana of approximately 75 percent (63 percent non-student) compares favorably with an estimated increase of 63 percent for urban United States.

Population Distribution

In order to provide a more usable population data tabulation for estimating future travel in Champaign-Urbana, the total populations for 1959 and 1980 were distributed to the cities by zones. These zones are the same as were utilized in the 1958 origin-destination study performed by the Illinois Division of Highways, with minor modifications to reduce the size of periphery zones which will experience high growth during the next 20 years. Both night and day population distribution have been prepared and are tabulated in Table B of the Appendix.

In estimating these population figures, several population statistics were accepted and used throughout. The total population for the Champaign-Urbana cities (1959) is 76,500. Approximately 3500 are located in the peripheral area. Of the Cities' population, approximately 20,000 are University of Illinois graduate and undergraduate students, the remainder (56,500) being the non-student population.

Estimates of the 1980 day and night population distribution were made after the projection of land use to an extent necessary to support the contemplated 1980 total urban area population of 140,000. This estimate is also included in Table B comparing the 1980 level with the existing population distribution estimate.

LAND USE

Existing Pattern

The existing land use pattern, portrayed on Plate 21, Appendix, was determined from field observations and is indicated in a generalized form. The Champaign and the Urbana central business districts are the major commercial areas for the vicinity. The other major traffic focus, the University of Illinois campus, is located between and to the south of the central business areas. Extending southward from the main University campus are extensive University of Illinois properties which are primarily utilized as farm land.

The existing industrial concentrations for these communities are generally located in three areas. One is along the Illinois Central Railroad tracks to the North. Another is located along the New York Central Railroad in the eastern portion of Urbana. The majority of the remaining industrial land is located in the third area in western Champaign along the Illinois Central spur line.

One outstanding factor regarding commercial development in this area is that until recently there was a low percentage of developed land devoted to commercial activities considering the size of the communities. During recent years additions of commercial land have been great in proportion to the total additions of developed land. The shopping center which was recently opened in western Champaign, although by no means a major deterrent to shopping in the downtown areas, has provided commercial facilities toward alleviating the previous condition of a low amount of commercial land.

No recent detailed land use survey has been prepared for this urban area, although such a study was made in 1956 for Champaign. The table below indicates the expected acreages of developed land to be devoted to the primary uses for urban areas of the general size of Champaign-Urbana. In addition, the 1956 values for the City of Champaign are indicated for comparison.

Acres Per 100 Persons

Use	Eleven Urban Areas[1]	Eleven Central Cities[1]	Champaign Non-Student 1956[2]
Single-Family	3.72	3.29	3.42
Two-Family	0.24	0.26	0.40
Multiple-Family	0.20	0.22	0.48
Commercial	0.39	0.31	0.25
Industry and Railroad	1.76	0.96	0.64
Public and Semi-Public	4.43	1.82	1.29
Streets	4.10	3.02	2.47
Total	14.84	6.89	8.95

[1] "Land Uses in American Cities," Harland Bartholomew, Harvard University Press, 1955.

[2] "Land Use and Zoning — Champaign, Illinois," Harland Bartholomew and Associates, 1956.

Several significant facts are apparent from the study of this urban area. Each city is almost completely developed within its limits although within the urban area itself there are extensive portions of undeveloped land. In general, communities in the population group of 50,000 to 150,000 would have vacant areas approximating 22 to 39 percent of total city area. As would be expected for a community containing a university of the proportions of the University of Illinois, there is a relatively high percentage of multiple dwellings and rooming house uses as well as public holdings. However, there is a surprisingly low percentage of land devoted to parks and playgrounds. Industrial uses also represent a lower proportion than would normally be expected, but recent trends indicate that this may be changed in the future.

Historic Trends

The basic guide in preparing the future land use plate has been utilization of the past trends in development projected towards a 1980 population of 140,000 for the Champaign-Urbana area. This does not include population in dwelling units beyond the anticipated 1980 city limits (leap-frogging). Historic development in this area has been most rapid during the past decade even though a rather constant development occurred for the previous several decades.

Residential acreage added to Champaign-Urbana shown in Plate 8 has been as follows:[3]

1920 to 1929 —
396 acres — 10,900 population increase
1930 to 1939 —
63 acres — 4,700 population increase
1940 to 1949 —
299 acres — 12,600 population increase
1950 to 1956 —
822 acres — 9,660 population increase

From 1950 to 1956 total population increased 15 percent and University of Illinois enrollment increased 12 percent. These additions during the 1950's were roughly distributed one-third to Urbana, one-sixth to northwest Champaign and the remainder (50 percent) to southwest Champaign. The development in Urbana was primarily in the southeast area. Considering the total developed land during the 1950's and the population increase for the same period, a rate of approximately 820 acres of residential development per 10,000 population increase is indicated. Of the total developed areas, approximately 65 percent is devoted to single and multiple family residences.

An important factor to consider in the estimate of residential land requirements is that the University of Illinois did not experience as high a growth during the period 1950-1956 (2 percent per year) as is contemplated from 1960 to 1980 (4 percent per year).

Factors Affecting Development

The basic guide in determining development during the future is derived from a study of past growth trends with due consideration for major deterrents to growth and attractors of growth anticipated during the future. Plate 9 indicates these major considerations.

Topography. The Champaign-Urbana area is relatively flat, easily developed land. There are no major problems associated with flood hazards although several areas currently have drainage problems. For years the cities have been plagued with poor drainage conditions in many areas. Recently the City of Urbana adopted a plan which can provide relief in those areas within its boundaries. Champaign had a similar plan under consideration in early 1960. Even though this proposal was not adopted, it is believed that conditions will not continue as they are for long. Thus the fact that a plan has not yet been adopted will tend to retard but not stop development in such areas as that near Mattis and Kirby. If plans are developed and followed, of course, drainage will not provide a major deterrent to development in the urban area. New storm main installations made along Cottage Grove Avenue will accelerate development in eastern Urbana.

Industrial Potential. Due to the location of new industries in the area, the railroads servicing the communities, and existing zoning ordinances, there is a likelihood of industrial growth along three primary lines. The most

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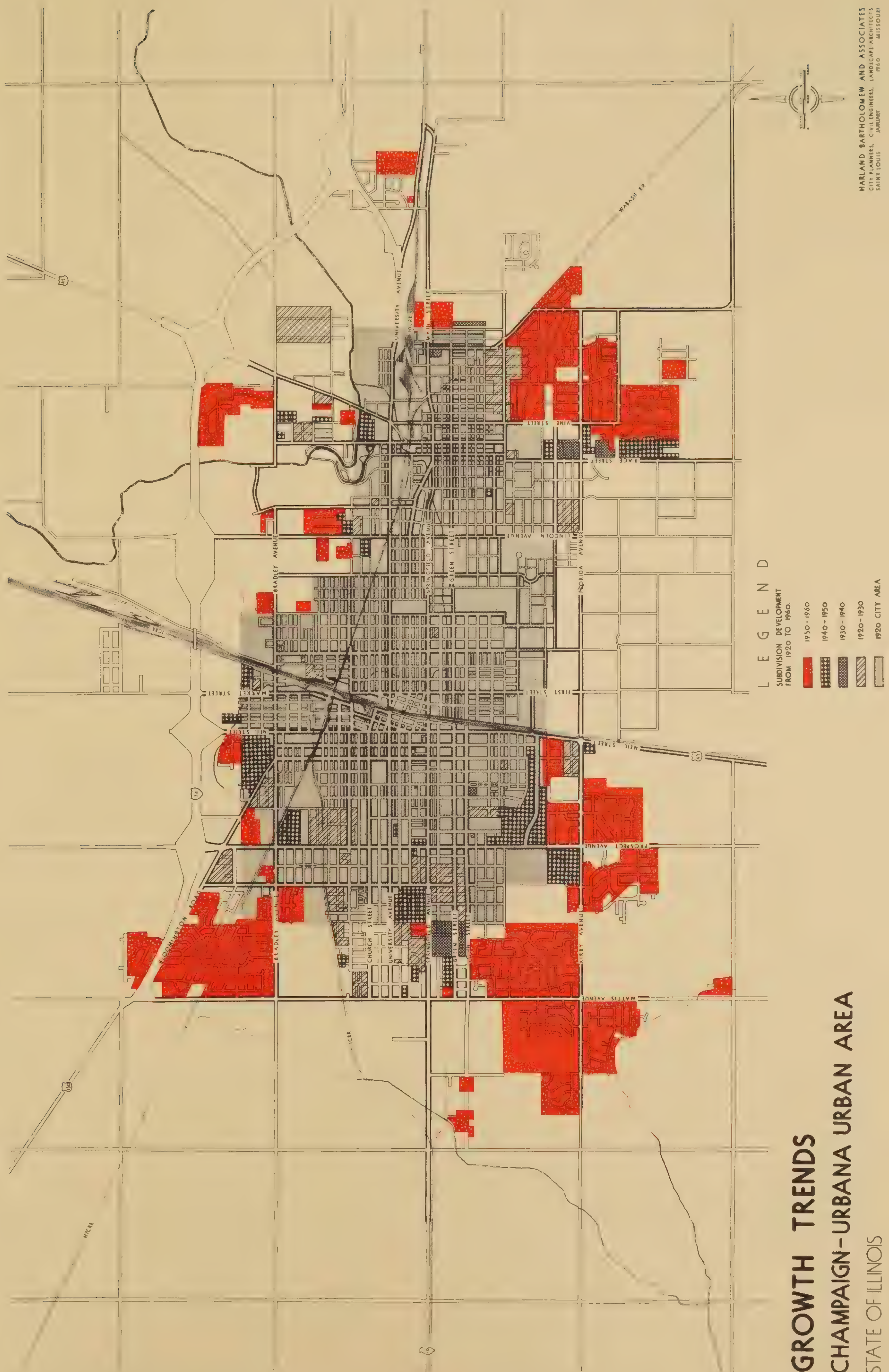
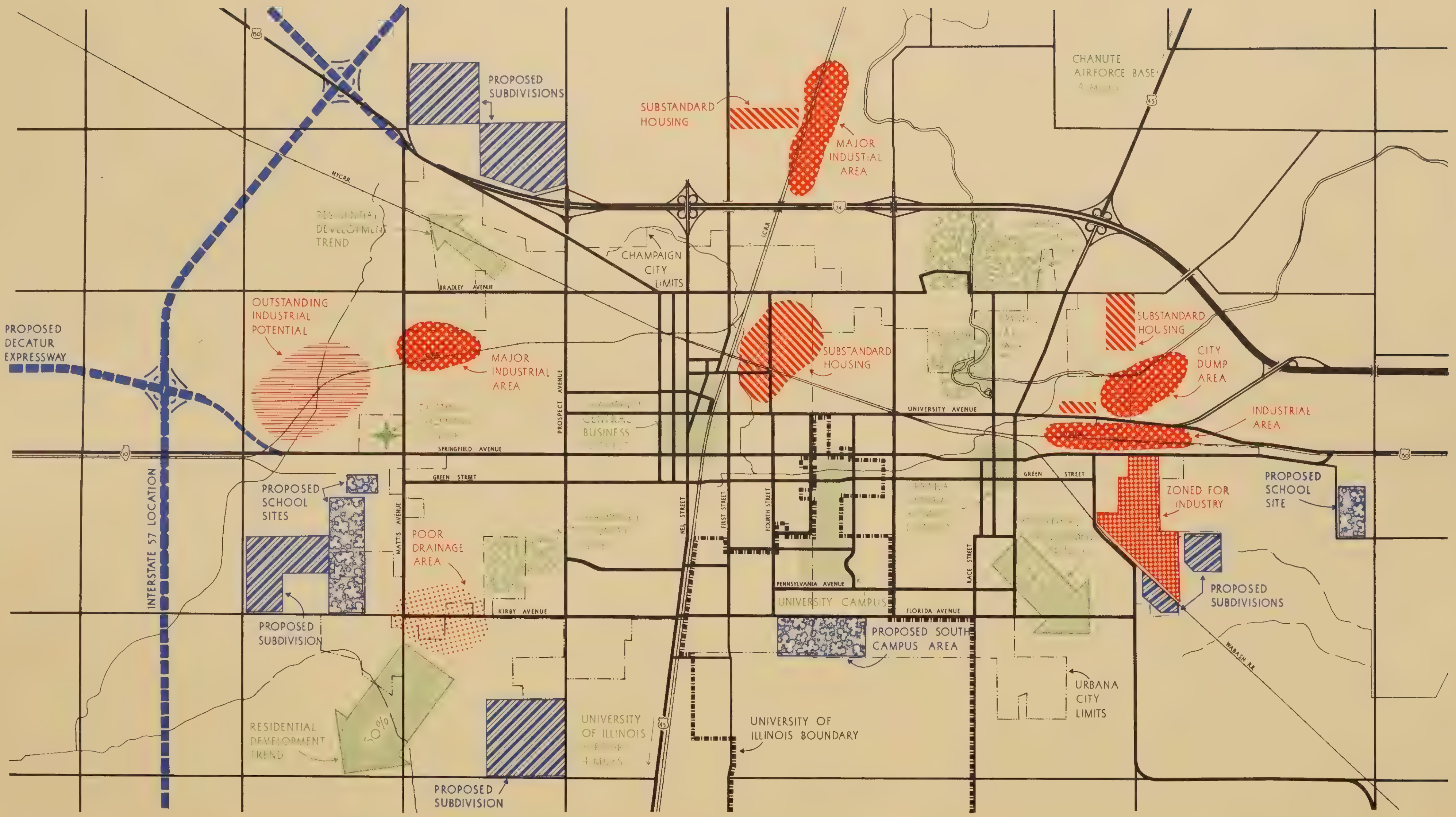
[3] Land subdivision data from 1920-1956 was developed by Dean Macris, William Lamont, and Don Bailey as a research report for Professor William Goodman, University of Illinois. The data for 1957-1958 was prepared by Professor Robert Harvey, University of Illinois.

PLATE 8



GROWTH TRENDS
CHAMPAIGN-URBANA URBAN AREA
STATE OF ILLINOIS

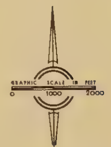
PLATE 9



FACTORS AFFECTING DEVELOPMENT

CHAMPAIGN-URBANA URBAN AREA

STATE OF ILLINOIS



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important of these areas is that corridor of land extending westward in Champaign generally along the lines of the Illinois Central Railroad. The proposed location of the Decatur Expressway and Interstate 57 will intensify the likelihood of this land development. Of all areas in Champaign-Urbana, this has the greatest potential for industrial growth.

In Urbana, promising industrial land is confined primarily to two locations. One is the sector south of the New York Central Railroad near recent industrial developments. Another potential area for light industry is along U. S. 45, particularly close to the Interstate 74 interchange.

Development Trends. In addition to the primary growth trends indicated on Plate 8 and discussed previously, the proposed development of several sections of land provides a guide toward future residential developments. Another major factor for consideration is the location of future school sites. In Champaign such a site exists south of Springfield Avenue and west of Mattis Avenue. Urbana also has a proposed school-park site located in the far eastern portion of the area as indicated in Plate 9. These school site locations in conjunction with the proposed interstate locations will tend to draw residential development to the east in Urbana and west in Champaign

Major Public and Semi-Public Areas. The general location of the University of Illinois and its land holdings are such that future developments will favor more growth in Urbana than has been indicated in the immediate past. This is due to the development of favorable time-distance relationships for residents in southern Urbana.

The large University holdings of land will prevent extensive subdivision activity near the cities and to the south. Leap-frogging development will continue toward Savoy along First Avenue extended as well as along other primary routes and major secondary routes. Heavy string development will occur toward Thomasboro, Staley, eastward on U. S. 150 and southward along U. S. 45.

Undesirable Areas. Some substandard areas of development indicated on Plate 9 will tend to retard growth toward the northeastern part of Champaign. The location of the Urbana City Dump and the Urbana-Champaign Sanitary District land in eastern Urbana north of U. S. 150 will also tend to retard development in that area. If efforts are directed to alleviate these factors, growth in such areas could be greater than indicated herein.

Commercial Development. In view of the probable success of the Country Fair Shopping Center, consideration will probably be given towards the development of a similar area in Urbana. For such a development, an area in southeast Urbana, south of Florida Avenue, seems most probable, but it will likely not develop for five years. Other commercial lots will continue to appear at major street intersections.

Probable 1980 Land Use

An estimate of the requirements of land to support the anticipated population increase to 1980 follows:

1. The high rate of development of residential land will probably continue in the future. Thus it has been assumed that an increase of 1000 persons in the cities (exclusive of University housed students) will occur with the development of 82 residential acres. The non-student population increase to 1980 will be approximately 35,200 and, based upon existing and contemplated future housing of students within the areas peripheral to the University, another 4000 persons will require housing exclusive of that provided on the University campus. Thus it is anticipated that 3220 additional acres of residential land will be required by 1980.
2. In view of the low percentage of commercial area until recently and the high rate of development during the past few years, a continued high rate of development of commercial lands is indicated. The estimated increase of five acres per thousand population is on the upper limit of development for com-

munities of this general population size. This would indicate a total requirement of 300 acres of commercial land by 1980. Some of this will occur as change in land use within the central business districts while the remainder will be new developments.

3. The expected realization of the industrial potentiality of this area indicates the likelihood of rapid industrial development during the future. The guide for these developments for industrial purposes by 1980 is 20 acres per 1000 population increase, which tends towards the upper limit of normal development. This would indicate a requirement for 1200 acres for industrial development between now and 1980.
4. Public and semi-public acreage at the present time is relatively low, compared to similar urban areas. In preparing future developments for this use category, maximum guidance was sought from University officials concerning University of Illinois requirements and plans. It is recognized that a much greater development of park land is desirable but unlikely. The total public and semi-public development to 1980 is estimated at 1100 acres.

A summary of these estimates is given below:

CHAMPAIGN-URBANA
LAND REQUIREMENTS
1960 - 1980

Type Use	Acres Required	Rate of Addition Acres/100 Population
Residential*	3220	8.2*
Commercial	300	0.5
Industrial	1200	2.0
Public and Semi-Public	1100	1.9
Streets	1280	2.4
TOTAL	7100	

*Based on population increase which does not include students to be housed by the University. Considering total population increase the rate is only 5.6 acres per 100 population increase.

The total additional land required to support the estimated Population increase of 60,000 is approximately 44.3 quarter sections. A consideration of the factors indicated on Plate 9 and the requirements for future land development enables the preparation of the probable future land use pattern. This is indicated on Plate 22, Appendix, in a generalized form.

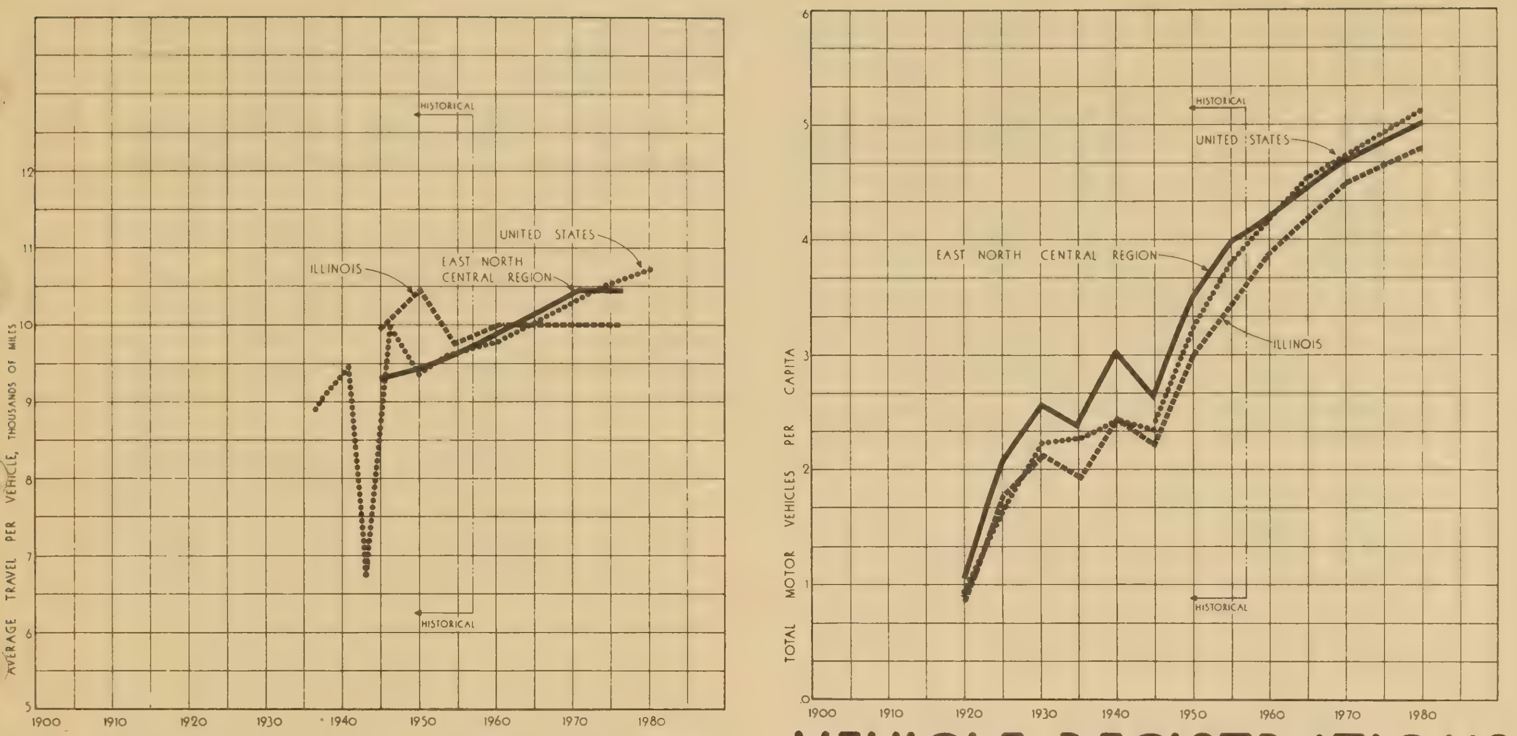
The development of an industrial area in Western Champaign near the vicinity of the Decatur Expressway-Interstate 57 interchange is indicated. Additional industrial developments will occur to some degree adjacent to and south of U. S. 150 in Urbana.

Probable areas of residential development are indicated following the general trends of the past, the anticipated location of attractors such as schools and shopping centers, and the general indications of University of Illinois planning for student housing. Some commercial and industrial development has been indicated within the central cities, and the very high probability of the development of a shopping center in southeastern Urbana has been considered. The likelihood of this shopping center is great in view of the general location of shopping areas in Urbana and the probable success of the Champaign shopping center during the next few years. Most of the additional commercial development will occur at intersections of major streets.

1980 TRAVEL

Projection Factors

The determination of a projection factor for producing future origin-destination data from current origin-destination data is primarily a matter of relating vehicular travel to population by location. The three basic components of such a factor are population, vehicular registration per capita, and average travel per vehicle. The use of such a factorial method of projection is demonstrated through checking historic evidence. A measure of total vehicle travel in Champaign-Urbana can be obtained by establishing a series of lines and measuring travel across each. By summing the average daily traffic volumes crossing these lines for any given year and comparing this



AVERAGE TRAVEL PER VEHICLE

VEHICLE REGISTRATIONS PER CAPITA

PLATE 10

value to that obtained for any other year, a factor can be computed to relate these travel indexes.

Utilizing the general procedure outlined above, a historic check was made for Champaign-Urbana for the period 1948-1956. This data is tabulated below:

Line	1948-1956 Increase
A — Champaign CBD	1.40
B — Urbana CBD	1.47
C — University Campus	1.39
D — I.C.R.R.	1.33
E — Periphery	1.69
All	1.43

This same factor, within reasonable limits, can be obtained by combining three factors representing increases in population, vehicle registrations per capita and use per vehicle. The population component of such a factor is determined from the population trend line depicted in Plate 7. In order to determine the other two components, two other graphs were prepared based upon historical data with estimates for the more recent years.

Plate 10 depicts the trends in motor vehicle registrations per capita for the United States, the Region (which is the census district in which Illinois falls), and the State of Illinois. It also indicates the trends in average travel per vehicle for the same classifications. In addition, plottings are given for estimates to 1980.

Average daily traffic increase factors were then developed for the period 1948-1956 for the United States, the eastern north-central region, and the State of Illinois.

Tabulated below are these factors for each with a computation for the Champaign-Urbana area utilizing its population factor with the

State of Illinois' use and registration components.

Locale	Population Increase	Registrations Per Capita	Use Per Vehicle	Total Factor
U. S.	1.14	1.34	0.99	1.51
Region	1.16	1.26	1.04	1.52
Illinois	1.09	1.28	0.97	1.35
Champaign-Urbana	1.18	1.28	0.97	1.48

The United States and the regional total factors are just over 1.5 whereas the factor for the State of Illinois is somewhat lower than 1.35. Checks of the reported ADT crossing the cordon lines enumerated previously for Champaign Urbana indicate that during the same period, 1948-1956, traffic actually increased in this urban area to a point intermediate between the Illinois factor and the regional factors and very closely approximating the Champaign-Urbana factor indicated.

Sumarized in the table below are the estimated increases in total travel from 1959 to 1980 for various locales. Utilizing the aforementioned procedure for developing the factor, for Champaign-Urbana the anticipated total increase in traffic is 2.20 (120 percent).

Locale	Population	Registration	Use	Total Factor
United States	1.47	1.24	1.10	2.01
Urban U. S.	1.60	1.24	1.10	2.14
Region	1.44	1.21	1.06	1.85
Illinois	1.31	1.25	1.01	1.65
Champaign-Urbana	1.75	1.25	1.01	2.20

The general procedure for preparing the estimates for 1980 travel has been to project the total 1958 trips to 1980 utilizing the anticipated increase factor of 2.20 for trips with either or both trip ends in the Champaign-Urbana Urban Area. 1958 through traffic has been projected on the basis of the increase factor for the State of Illinois with special considerations for diverted traffic to the interstate routes. The zones and stations utilized for recording the 1980 estimated trips were those designated by the Illinois Division of Highways for the 1958 Origin-Destination Study with minor modifications. Large peripheral zones were split and additional stations were added to include new highways anticipated by 1980. All zone and station trips have been projected separately utilizing individually derived projection factors. The totals were then balanced against the over-all totals obtained for the urban area. These values are tabulated in the Appendix, Table C, with Plate 25 indicating the zone and station locations.

The over-all population increase factor for Champaign-Urbana from 1959 to 1980 has been estimated at 1.74, a 74 percent increase. In developing the population component of the projection factor for each individual zone, the following guides were utilized:

1. For zones experiencing high growth the factors were developed on a comparative basis utilizing number of persons per acre of developed land.
2. In essentially developed zones the basic guide has been a population increase factor of 1.04, which is indicative of the 4 percent average increases in sizes of family anticipated during the next 20 years.
3. Zones containing University of Illinois students have been estimated on a non-student plus student basis.

The over-all vehicle registrations per capita factor has been estimated at 1.25, an increase of 25 percent. The projection of individual zone increases has utilized this figure as a guide with refinements being applied for zones primarily of a student population character. The total number of vehicles for students has experienced a great fluctuation dependent upon University policy relative to which students may have cars on campus. Motor vehicular registrations per student during the past decade indicate that the increase to be anticipated during the next 20 years is 48 percent. This is almost double the anticipated motor vehicle registrations per capita increase for the urban area. A minimum anticipated increase in student vehicles by projections based upon registrations during the past decade with emphasis towards those years in which tight restrictions have been utilized indicates an anticipated increase of 30 percent. This is still greater than the over-all increase of 25 percent which has been estimated for the Champaign-Urbana area.

In view of these factors, more emphasis has been placed on increases in vehicle registrations in zones with student residents. Thus the final data depicted indicates anticipated increases in traffic volumes for those areas if greater restrictions are not placed on student vehicle registrations on campus.

Based upon past trend data and projections for the State of Illinois, the use component of the projection factor for Champaign-Urbana is essentially neglible (1.01). For specific zones, however, the use factor ranges from below 1.0 to above 2.0, dependent upon the type of zone in question. In determining the use component for specific zones, the basic guide has been to study land use within the zone and location within the area, and, on a judgment basis, estimate a use component for the factor. This enabled the determination of an over-all projection factor and thus a total 1980 trippage. In some instances the use factor was later adjusted after a study was made of all zones' 1980 trippage and relating similar zones (on a trips per acre basis).

A complete tabulation of 1980 urban area origin and destination data is enumerated in the Appendix. Table D indicates interchange between the internal zones while Table E shows interchange between the stations and the internal zones.

Internal-Internal Trips

The total number of internal-internal trips for 1980 has been determined by multiplying the 1958 total (356,854) by the projection factor of 2.20. This indicates a 1980 value of 795,580 trips. Table C lists the totals for each zone in addition to its individual projection factor.

In order to aid in the estimation of 1980 trips for individual zones, two types of data were developed from the 1958 Origin-Destination survey report. Calculations were made of trips per acre of developed land and trip generation per capita per zone on both a day and night population basis.

There are two zones having unusual features which required special calculations. These are the zones which contain the Country Fair Shopping Center and which most likely will contain a shopping center in Urbana if and when such is developed.

The Country Fair Shopping Center in Champaign was not operating at the time of the 1958 Origin-Destination survey. Rather than try to adapt that survey to include the shopping center as it exists in 1960, an estimate was made for total trips to the shopping center for 1980 and this figure was introduced into the 1980 Origin-Destination table. It has been assumed that the shopping center which will probably locate in Urbana will be developed and in operation by 1965. For both of the shopping centers, the population component of the projection factor was derived utilizing the city non-student population increase since this is a better measure of the area from which the shopping center attracts its patronage.

External-Internal Trips

Due to the development of the interstate system between now and 1980, there will be changes in the entry points for some of the external-internal trips. It has been assumed that the total increase in external-internal movements will follow the over-all increase in trippage for Champaign-Urbana. The total 1958 movements, 26,605, has been increased by a factor of 2.20 to provide a 1980 trippage of 58,500.

An inspection of the 1958 external zones in conjunction with movements from each of these zones to the Champaign-Urbana area and travel time estimates has enabled the estimation of how many trips' entry points will be changed by 1980. The tabulations in Table E, Appendix, indicate the total 1980 trips derived for the 1980 stations.

External-External Trips

Prior to determining the total increase factor for external-external (through) trips, a study was made of the relative origins of these movements in order to determine the proportions of through traffic which were regional and which were state. The regional increase factor as determined previously is 1.85, and the Illinois State increase factor is 1.65. Approximately four-sevenths of the total through traffic appears to be of a state character at the present time. Thus it was initially assumed that the increase for through traffic will follow the Illinois State increase factor of 1.65. In addition to these volumes there will be diverted traffic realized on the interstate routes. The distribution of the projected volumes less the diverted traffic was made in proportion to the existing total through traffic interchange between stations with consideration for the fact that the entry point of some of these trips will be changed.

The distribution of the diverted traffic volumes on the interstate routes was made primarily on a judgment basis after careful scrutinization of the over-all pattern of interstate routes throughout the central portion of the United States. (See Plate 4, Georgraphic Location, Champaign-Urbana Urban Area.) These diverted traffic volumes were added to the projected traffic volumes which were assigned to the interstate system to arrive at a final estimation of the 1980 through traffic flows.

CAPACITY DEFICIENCY

After the completion of the 1980 origin-destination tables, flow maps were prepared to depict desire flows and estimated average daily traffic for the Champaign-Urbana Urban Area. The first step in the preparation of these maps was to establish corridors for analysis purposes. Two series of corridors were utilized. The first consisted of north-south and east-west oriented corridors (Cardinal Corridors), while the second series consisted of corridors oriented on a 45 degree angle to the cardinal corridors. Zone centroids were developed for analysis purposes and represent centers of the 1980 developed area for the basic zones utilized in the 1958 Origin-Destination study performed by the Illinois Division of Highways.

Plate 11 indicates the desire 24-hour flow in east-west and north-south oriented corridors as determined from trippages between stations and zone centroids falling within each corridor. This desire flow does not include through traffic, but it does include external-internal and internal-internal desire movements. Similarly, the plate depicts desire movements oriented on a 45 degree angle. Careful attention was given to these plates in order to decide if a true requirement existed for the development of new radial streets in Champaign-Urbana. No such requirement is indicated.

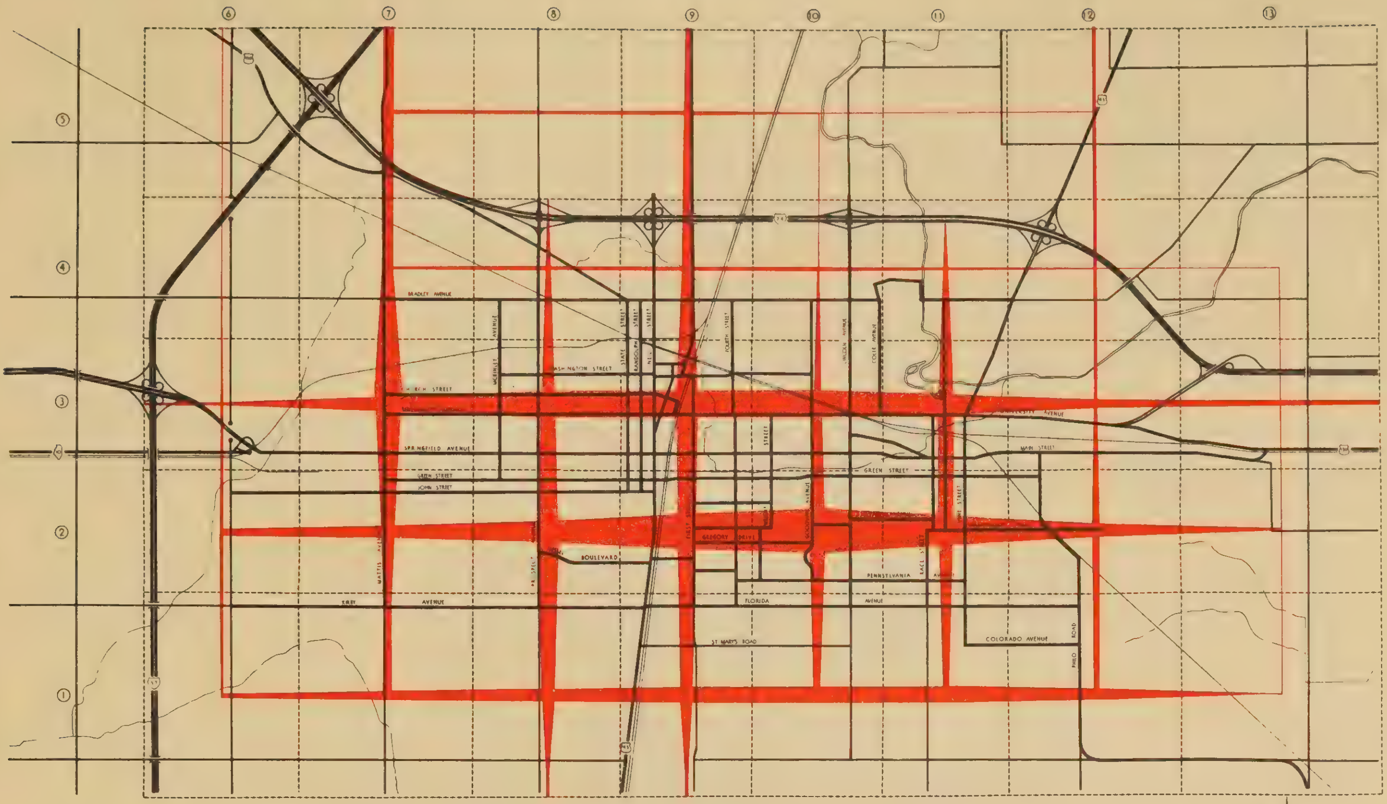
In addition to the desire movements indicated in these plates, there are other movements not cleanly falling within a corridor which must be included in a final portrayal of 24-hour traffic desire flow.

Utilizing the data on desire flow within corridors and tabulations of "all other" movements, Plate 12 was prepared to indicate 24-hour desire flow within the cardinal corridors. The flows thus indicated do not include traffic which will utilize the interstate routes. Thus it is for this traffic flow that the major street network must be designed. Assignments of 24-hour volumes were later made to the proposed major street network.

In preparing Plate 12 extensive travel time studies were made for movements involving the interstate system. Relative travel times were estimated for routes utilizing the interstate in part and utilizing only the major street network. Each desire movement, was then assigned partially to the interstate and partially to the major street system based upon the travel time estimates.

The anticipated traffic that will utilize the interstate routes will develop 1980 24-hour volumes ranging from 10,000 to 12,000 on approaches to the Champaign-Urbana Urban Area. The maximum 24-hour volume anticipated is 21,000 vehicles on the section of FAI 74 between FAI 57 and the Neil Street interchange. Detailed studies of these traffic flows and turning movements on the various sections of the system indicate that the general design features of existing and proposed construction are quite adequate for 1980 levels of traffic. If the development of an adequate major street network in the northern portion of the cities is not accomplished, interstate volumes will be higher than indicated.

In view of the indicated adequacy of the interstate routes in the Champaign-Urbana area, it is assumed that the assigned volumes will use the interstate routes and that the remaining volumes represent the 1980 design load for the major street network. Thus, from the



1980 CARDINAL CORRIDOR DESIRE FLOW

CHAMPAIGN-URBANA URBAN AREA

STATE OF ILLINOIS

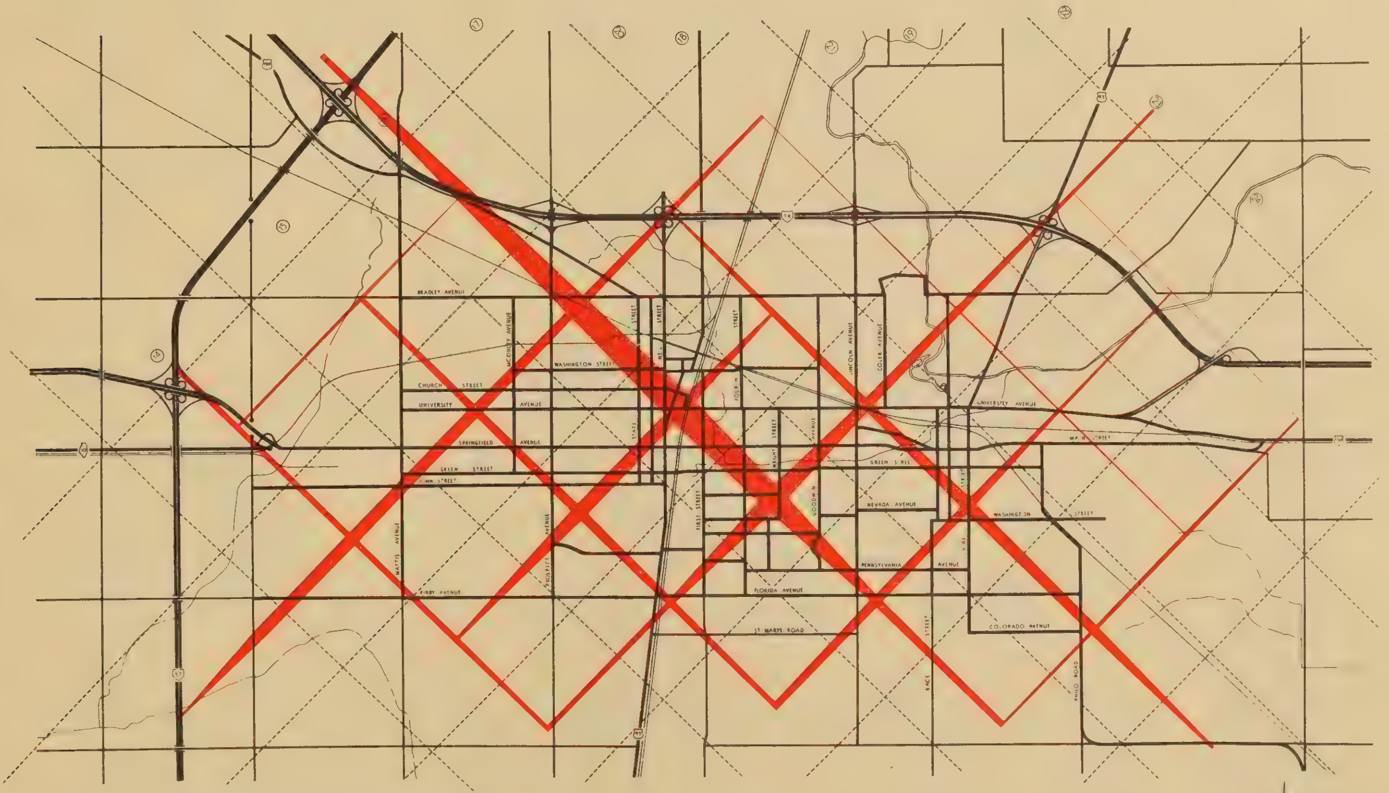
L E G E N D

② CORRIDOR NUMBER

CORRIDOR ANALYSIS LINES

🟥 10,000 20,000 CORRIDOR 24 HOUR DESIRE FLOW

HARLAND BARTHOLOMEW AND ASSOCIATES
CITY PLANNERS CIVIL ENGINEERS LANDSCAPE ARCHITECTS
SAINT LOUIS APRIL 1960 MISSOURI



1980 45° CORRIDOR DESIRE FLOW

CHAMPAIGN-URBANA URBAN AREA

STATE OF ILLINOIS

L E G E N D

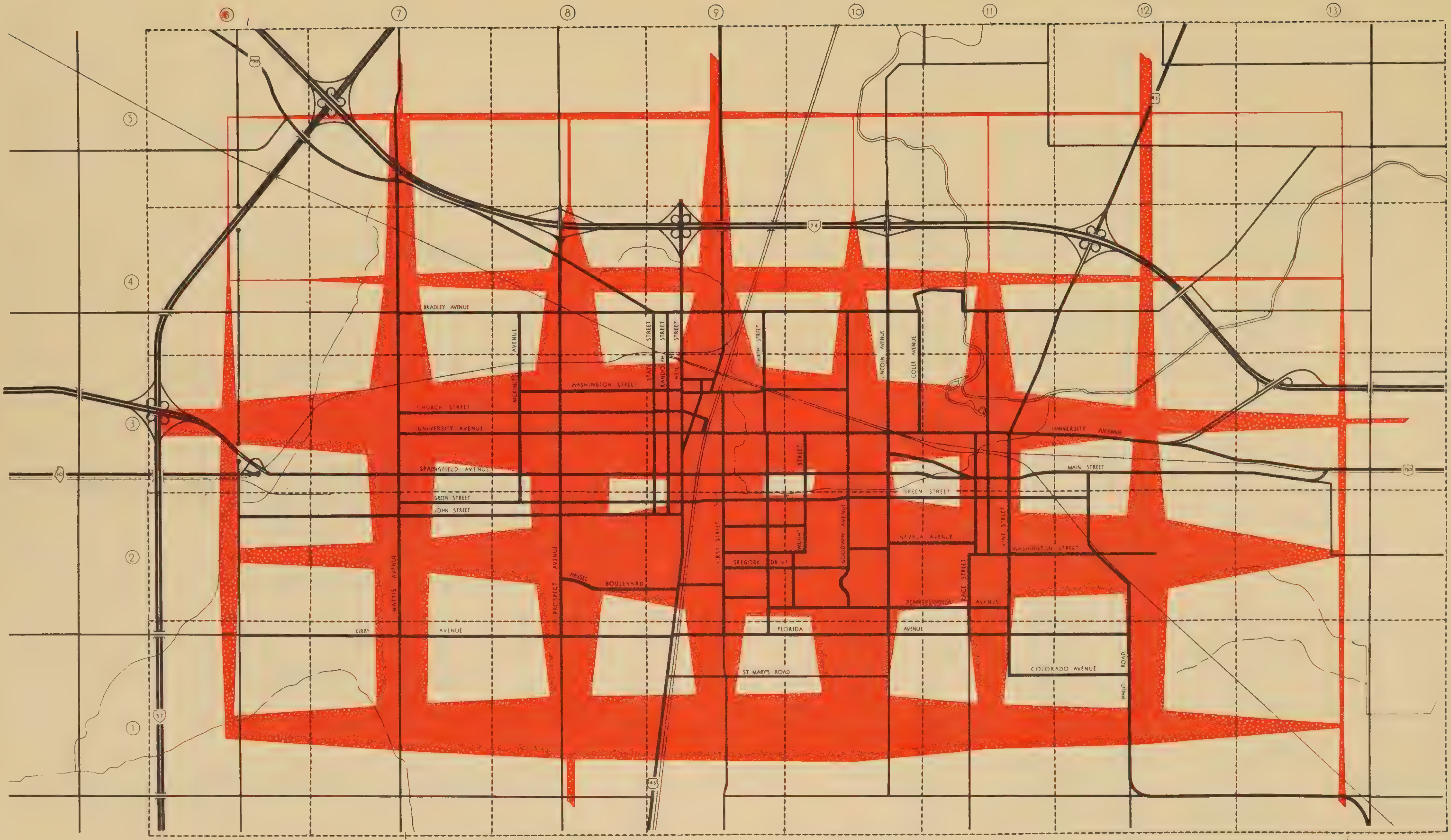
🟥 10,000 20,000 CORRIDOR 24 HOUR DESIRE FLOW

CORRIDOR ANALYSIS LINES

⑮ CORRIDOR NUMBERS

HARLAND BARTHOLOMEW AND ASSOCIATES
CITY PLANNERS CIVIL ENGINEERS LANDSCAPE ARCHITECTS
SAINT LOUIS APRIL 1960 MISSOURI

PLATE 12



1980 CORRIDOR 24 HOUR DESIRE FLOW

CHAMPAIGN-URBANA URBAN AREA

STATE OF ILLINOIS

L E G E N D

- - - - - CORRIDOR ANALYSIS LINES

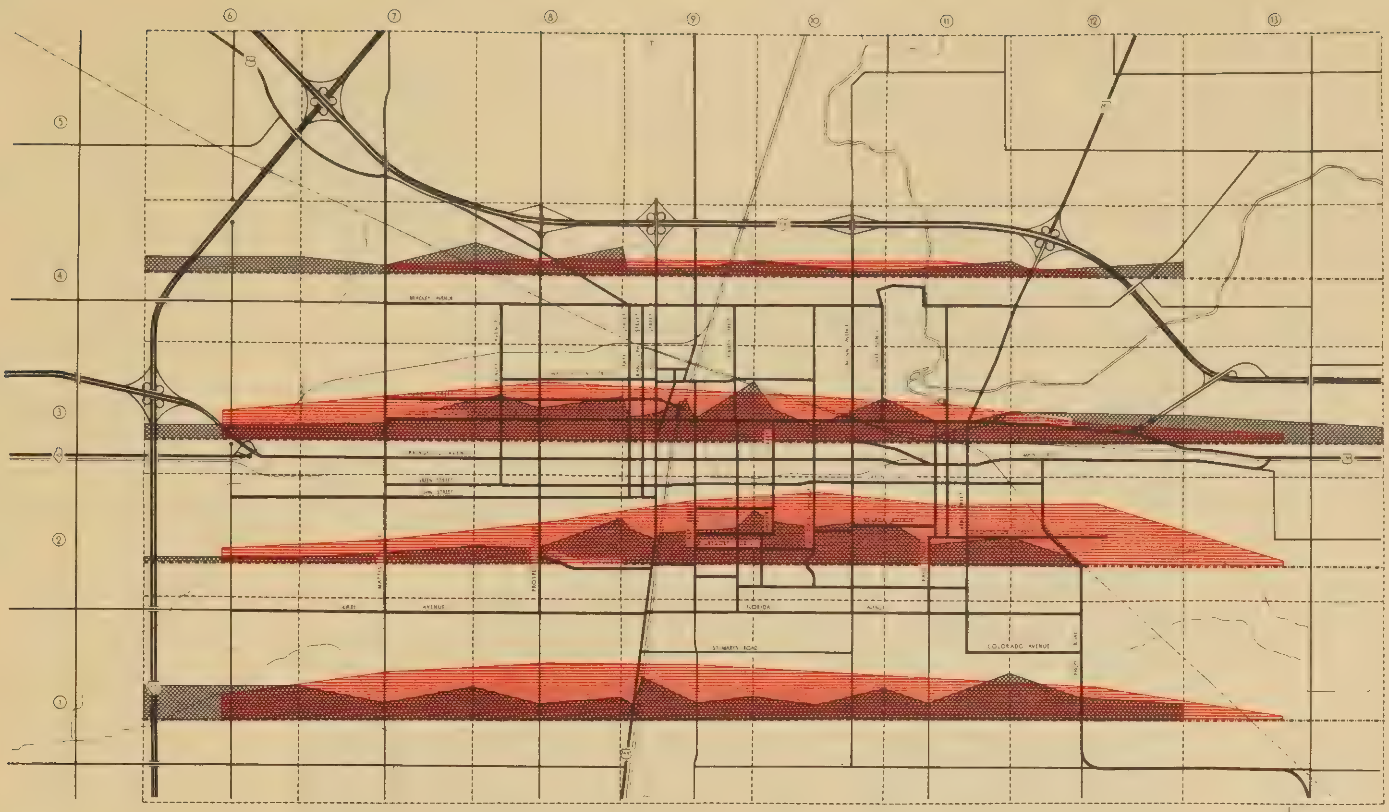
10,000 20,000 24 HOUR ASSIGNED DESIRE FLOW EXCLUSIVE OF INTERSTATE VOLUMES

① CORRIDOR NUMBER

GRAPHIC SCALE IN FEET
0 1000 2000

HARLAND BARTHOLOMEW AND ASSOCIATES
CITY PLANNERS, CIVIL ENGINEERS, LANDSCAPE ARCHITECTS
SAINT LOUIS APRIL 1960 MISSOURI

PLATE 13



1980 PEAK HOUR DESIRE FLOW

CHAMPAIGN-URBANA URBAN AREA

STATE OF ILLINOIS

L E G E N D

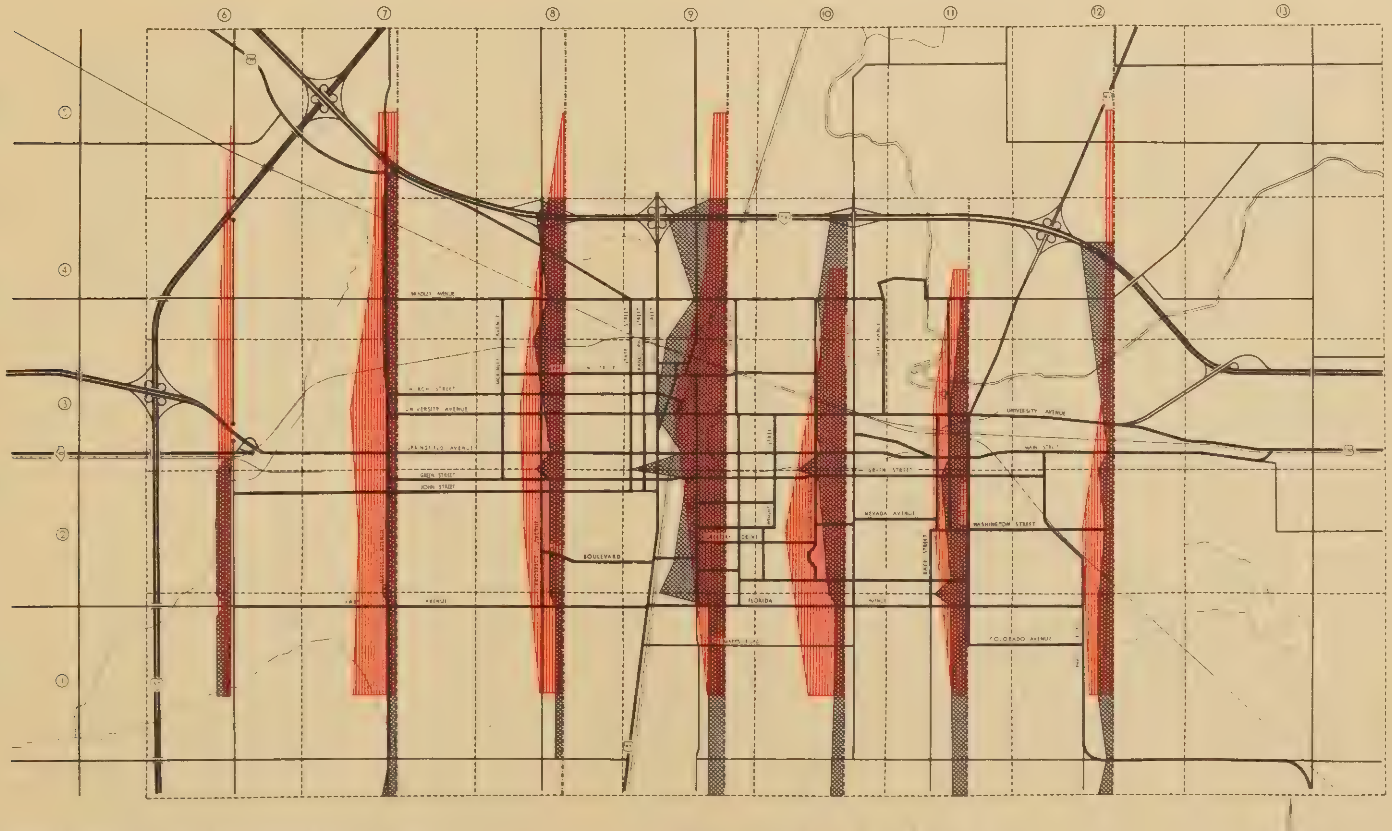
NOTE CAPACITY AND DESIRE FLOW INDICATE ONE WAY VOLUMES EXCLUSIVE OF INTERSTATE

----- CORRIDOR ANALYSIS LINE

② CORRIDOR NUMBER

DESIRE FLOW ▨ CAPACITY 1000 2000 VEHICLES PER HOUR

HARLAND BARTHOLOMEW AND ASSOCIATES
CITY PLANNERS, CIVIL ENGINEERS, LANDSCAPE ARCHITECTS
SAINT LOUIS APRIL [illegible] MISSOURI



1980 PEAK HOUR DESIRE FLOW

CHAMPAIGN-URBANA URBAN AREA

STATE OF ILLINOIS

L E G E N D

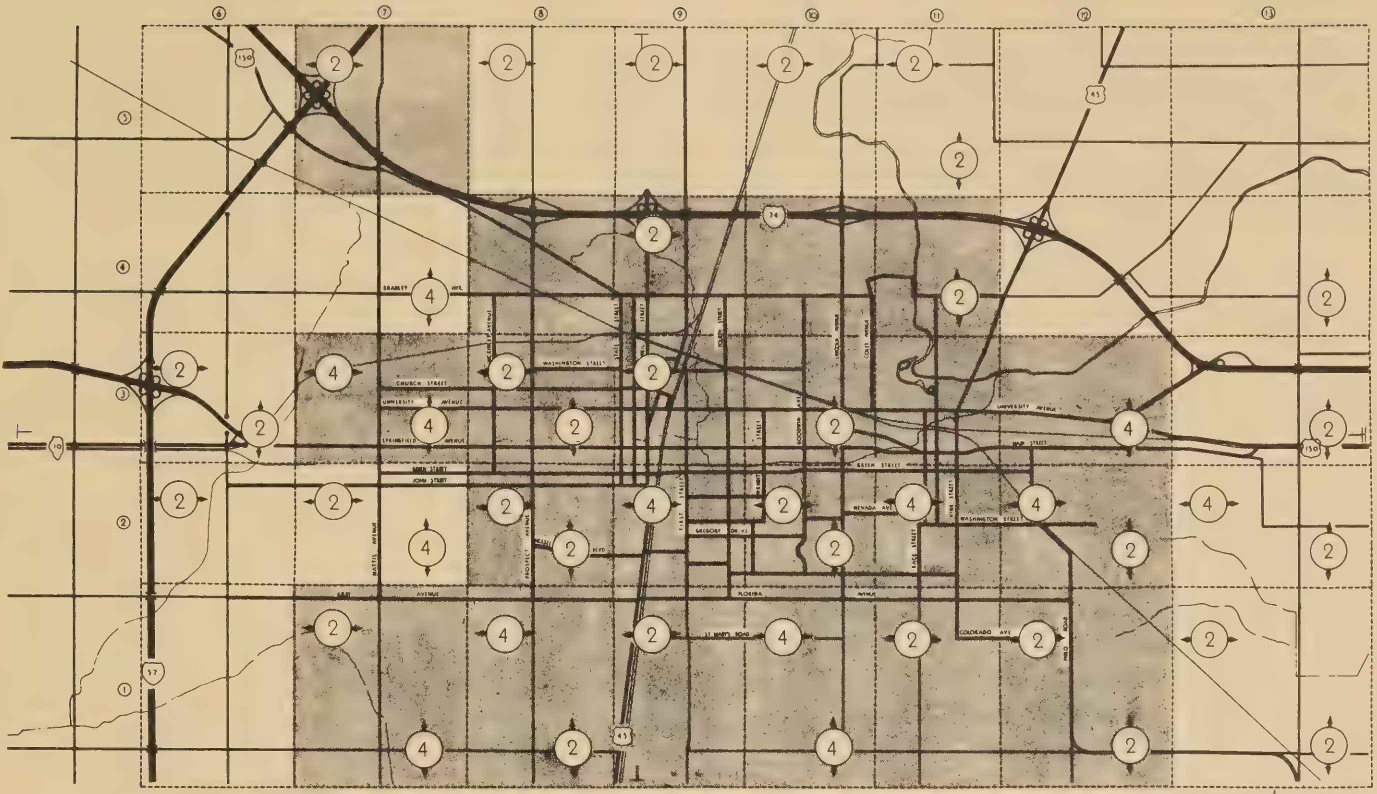
NOTE CAPACITY AND DESIRE FLOW INDICATE ONE WAY VOLUMES EXCLUSIVE OF INTERSTATE

----- CORRIDOR ANALYSIS LINE

② CORRIDOR NUMBER

DESIRE FLOW ▨ CAPACITY 1000 2000 VEHICLES PER HOUR

HARLAND BARTHOLOMEW AND ASSOCIATES
[illegible]



1980 CAPACITY - DEFICIENCY
CHAMPAIGN - URBANA URBAN AREA
STATE OF ILLINOIS

LEGEND

② with arrows	TWO-WAY LANE CAPACITY DEFICIENCY
▨	GENERAL INTERSECTION CAPACITY DEFICIENCY
②	CORRIDOR NUMBERS

HARLAND BARTHOLOMEW AND ASSOCIATES
CITY PLANNERS CIVIL ENGINEERS LANDSCAPE ARCHITECTS
SAINT LOUIS APRIL 1960 MISSOURI

PLATE 14

indicated 24-hour corridor desire flow, data was developed to indicate areas of general capacity deficiency or adequacy to guide in determining desirable locations for major streets and the general lane requirements by areas. The following procedure for determining this was utilized:

1. Determine the 1980 peak hour desire flow anticipated within the corridors of the Champaign-Urbana area.
2. Calculate the existing major street capacity.
3. From the work accomplished in Steps 1 and 2, determine capacity deficiency areas and design the major street network to alleviate these deficiencies.

Plate 13 indicates the 1980 corridor peak hour one-way desire flow and the existing major street network hourly one-way capacity. These peak hour one-way flows were calculated utilizing the 1980 24-hour desire data previously indicated in conjunction with estimated peak hour percentages and directional distribution factors based upon existing factors as presented in Plate 5, 1959 24-Hour Traffic Flow. The location of a peak hour flow band in Plate 13 is not indicative of which street will carry this flow, but it does indicate general areas for the flows. As would be expected, the general trend is for the peak hour flow to be rather small at the extremities of the corridors and to approach a maximum volume towards the center sections of the corridors.

The computation of the hourly capacities for the corridors was accomplished utilizing the existing major street system, extended in a few cases, and with a few improvements assumed when such improvements have been indicated as programmed for construction during the next two years. The streets indicated by the heavy lines in Plate 13 were those assumed for this computation. The capacities indicated were calculated assuming existing conditions on the major street system. For instance, if Prospect Avenue now permits parking or does not have a parking restriction, such was utilized in determining the capacity of Corridor 8.

Capacities were estimated for all major streets within each corridor section at the analysis lines and at major street intersections. For a specific corridor, the analysis lines utilized were the cross-corridor boundaries. As indicated by study of Plate 13, in many sectors of the city the capacities of the major streets themselves are not adequate to carry the 1980 level of traffic flow. For instance, this is true in the Corridor Seven which contains Mattis Avenue. However, in some sections of the city, the capacity deficiency is at intersections where the capacity of the major street itself cannot be realized. This dictates that consideration be given to increasing intersection capacities in those areas rather than to widening an entire street.

In order to summarize the meaning of Plate 13, Plate 14, 1980 Capacity Deficiency, was prepared to indicate lanes of deficiency as well as intersection deficiencies. The number within each circle in each corridor section indicates the total two-way lane deficiency for that section at the 1980 level of traffic desire flow for the direction indicated by the arrows. For example, in Corridor Section 1-8 there is a four-lane capacity deficiency in an east-west direction, and a two-lane capacity deficiency north-south. In addition to this, there will be intersection capacity deficiencies at Prospect and Kirby Avenue, and Prospect and Shapland Road. Similar data is indicated for each corridor section for the entire city.

Specifically, it should be noted that the lane deficiencies are indicated for the Illinois Central Railroad tracks by reading down Corridor Nine. For instance, in the Bradley Avenue Corridor (Corridor Four) there is no lane deficiency at the Illinois Central Railroad tracks.

Not all of the deficiences indicated for a corridor will necessarily be met within that corridor in the selection of the most suitable major street plan. This is partly due to the fact that some grouping of desire flows was necessitated in order to depict corridor flow in a readily perceptible manner which could be utilized in determining deficiency areas. For instance, the corridor line between Corridors One and Two is very close to Kirby Avenue and part of the deficiency in Corridor Two could be alleviated by an improvement of Kirby Avenue. However, Plate 14, 1980 Capacity Deficiency, is a very important tool as a guide in indicating which areas should be improved and to what degree improvements are necessary. It enables distinguishing those elements of various proposals which are necessary to meet a traffic requirement by 1980. This requirement by traffic call has been determined for all plans considered. Those elements of each plan which were not proposed as traffic call were therefore considered necessary as a planning requirement.

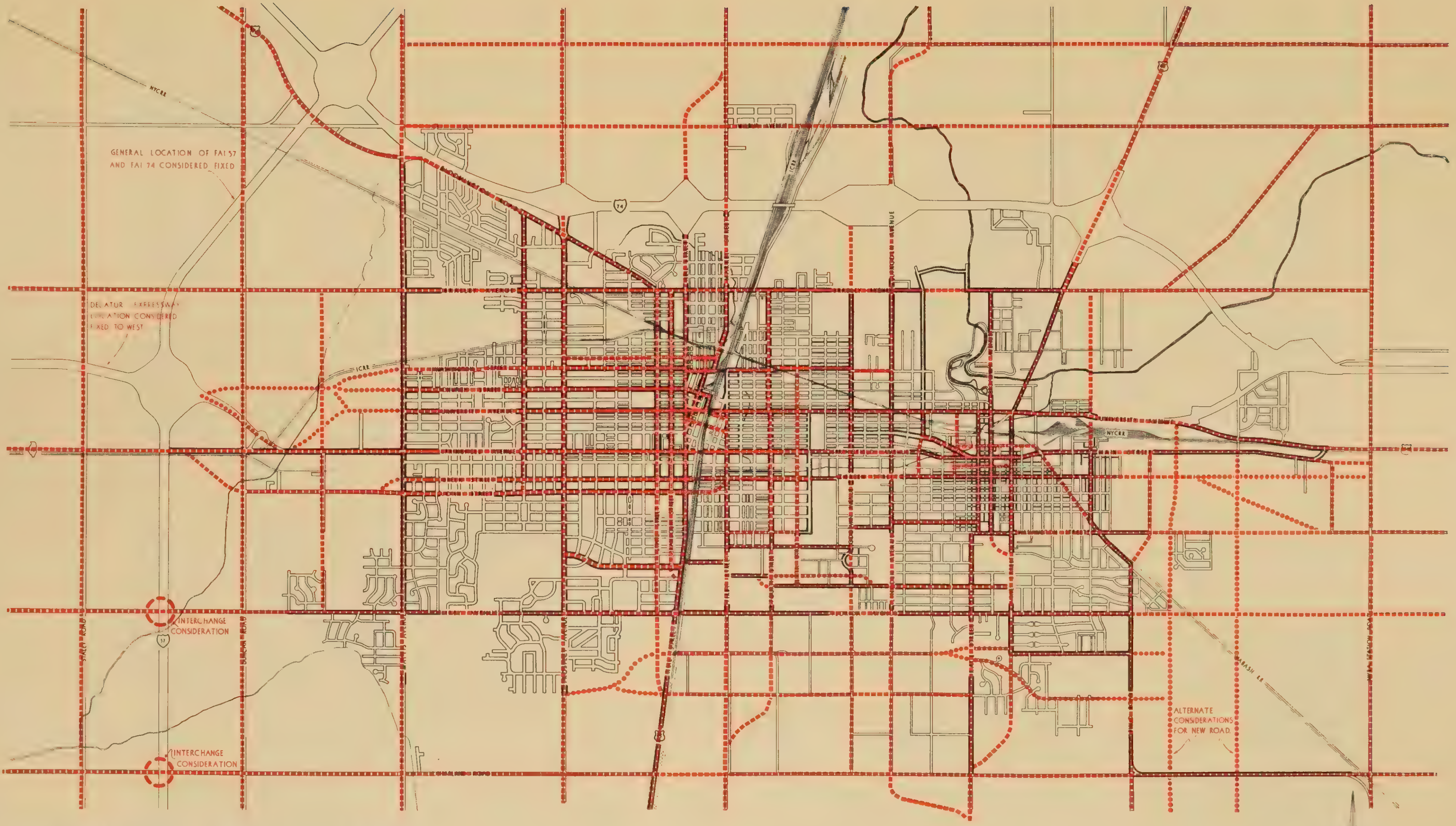
THE MAJOR STREET PLAN

ALTERNATIVE MAJOR STREETS

Plate 15 indicates the street possibilities considered in detail for development of the major street plan for the Champaign-Urbana Urban Area. Possibilities which could be eliminated due to obvious shortcomings are not included. A summary comparison of these streets with regards to continuity, existing right-of-way and pavement widths, the possibilities for extension, location and relative ability to distribute traffic are indicated in Table E. A detailed discussion of the major points concerning these streets follows.

It is emphasized that the philosophy used in the development of a major street plan for this urban area has been to develop a series of higher level major streets, which will carry the bulk of the traffic, rather than to utilize a great number of streets to a lesser degree and thus distribute this traffic over a very large number of streets.

PLATE 15



ALTERNATIVE MAJOR STREETS

CHAMPAIGN-URBANA URBAN AREA

STATE OF ILLINOIS

L E G E N D

- ▬ LOCATION FOR MAJOR STREETS
- ●●● ALTERNATE CONNECTIONS BETWEEN MAJOR STREETS

NOTE: THE ROUTES INDICATED ARE THOSE PRIMARY LOCATIONS STUDIED IN DETAIL

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Shapland Road

Primary consideration has been given for the development of Shapland Road as a semi-expressway type facility. Its excellent location with respect to the possibilities of future extensions, both to the east and to the west, enable consideration of development of Shapland as a parkway with a variable median and high capacity intersections with other major streets. Although the right-of-way at the present time is restrictive for this type of development, it is easy to acquire additional right-of-way in comparison to other possibilities in the area. Shapland Road does not provide complete continuity across the Champaign-Urbana area, but this could be achieved by the development of an underpass at the Illinois Central Railroad and extension of Shapland Road. Shapland would provide excellent service as a distributor street for all traffic in southern portions of the cities. It could easily be connected to FAI 57 with the development of a diamond type interchange and to FAI 74 with a connecting link from Spur 11 to the southeast of Urbana. Relative to any other existing possibility for major street development in the Champaign-Urbana area, Shapland Road, developed to such degree, offers more long-range returns for dollars spent than any other development. Thus it has a very high relative economy factor.

Kirby-Florida Avenue

Even though consideration was given for the development of Kirby-Florida Avenue to expressway level of service, the existing restrictive right-of-way and pavement widths, as indicated in Table A, dictate through economy that Kirby-Florida be developed to a lesser degree than Shapland Road. Right-of-way acquisition should be facilitated between Neil Street and Lincoln Avenue in view of the University of Illinois properties there, and consideration in this area should be directed towards a high level of development (16-foot median). Extension of Kirby-Florida in the future is not as easily accomplished as extension of Shapland Road would be in view of the county road network in the surrounding territory. This is particularly true to the east of Urbana. An additional consideration indicating the desirability of providing maximum access on Kirby-Florida is that two elementary schools are located adjacent to it. The requirement for a traffic interchange with Interstate 57 will not exist to a great degree for 15 years. In view of this, the most economical development would be at Shapland rather than at Kirby Avenue if the right-of-way is obtained in the next few years. The primary factor influencing the restriction of development of Kirby-Florida Avenue to a four-lane facility is restrictive right-of-way.

University Avenue

University Avenue is one of the few streets providing continuity across the urban area. At the present time, however, west of Mattis Avenue there is no developed street. In view of the high traffic call in this section of the area, primary considerations were directed towards considering some method to connect either to Springfield or the proposed Decatur Expressway. Existing right-of-way on University is as great as 82 feet in many sections. Although volumes at the present time are the highest in the communities on the section of University from downtown Champaign eastward into Urbana, the eventual completion of Interstate 57 will remove much of the so-called through traffic from this section of University Avenue and place it on the by-passing interstate routes around the communities.

Much detailed consideration was given to the proposed connections of University Avenue in western Champaign. One of two alternatives is an extension of University Avenue west across Mattis Avenue, with a gentle reverse curve into Springfield Avenue just east of the proposed connection of the Decatur Expressway Spur to Springfield Avenue. A second alternative is an extension of University Avenue westward across Mattis with a reverse curve carrying it northward to approximately one-half mile above Springfield Avenue and then extending it straight westward for a connection directly into the Decatur Expressway interchange. This emphasizes the question of a possible relocation of the Spur from the Decatur Expressway into Champaign-Urbana.

The Decatur Expressway Spur

The 1980 origin and destination data indicates that the proposed location of the Decatur

Expressway Spur and its resulting connection into the Champaign-Urbana major street network would impose a severe traffic burden on Springfield Avenue. Although some streets in this area could be widened effectively to meet the 1980 traffic call, great consideration should be given to a one-way couple to provide maximum utilization of existing street widths. Several possibilities exist for the development of this couple, and each of the following was considered: Springfield and University, University and Church, Church and Washington.

1. **Springfield-University Avenue.**
   a. It does not easily permit restriction of truck traffic on University Avenue, which does traverse a developed residential area. This developed area, however, at the present time recognizes to some degree that University is a major street. In view of the development of heavy industry in this sector about Mattis Avenue, this residential property is becoming less pronounced as residential and is becoming associated with an industrial area. As such, it is no longer to be considered the prime residential area of Champaign. Probable future developments in the area further emphasize this factor. It is also important to note that University Avenue is now, always has been and always will be a major street, primarily due to its continuity and right-of-way widths across the Champaign-Urbana area. Thus the fact that it does pass through a residential area is not as important a factor as one might first think. There is an elementary school located on University Avenue in the vicinity of McCullough Street and the Champaign High School is also located on University Avenue. The former of these school locations would tend to indicate a desire that University not be a major street; however, in view of the high school location, it is necessary that University be kept as a major street to provide access to this type school.

   b. This couple would create a difficult intersection in connecting University to Springfield where the proposed Spur from the Decatur Expressway connects with Springfield Avenue. This difficulty can be solved for the 1980 level of traffic without overwhelming problems; however, with the passage of years beyond that, the problem would be intensified to the point where it would be most desirable that a different type of arrangement exist. It is important to remember at this point that Springfield is one of the few major streets which will extend across Interstate 57 and thus provide access westward for the City of Champaign. Thus the development of University and Springfield as a couple, connecting them in the vicinity of the proposed location of the Spur from the Decatur Expressway, would somewhat restrict the future development of a major street for the Springfield Corridor.

   c. There is a disadvantage in utilizing University as one portion of a one-way couple in that, with its high right-of-way widths, it would be desirable to maintain it with two-way traffic with the possibility of future widening.

   d. Future extension to the east is somewhat better utilizing University and Springfield as compared to the others, in that both streets do have underpasses at the Illinois Central Railroad tracks and extend with some degree of continuity on eastward through Urbana.

   e. University and Springfield are separated by approximately four blocks distance which is too great for the separation of one-way streets.

2. **University-Church Street Couple.**
   a. This, again, would tie up University and its 82 feet of right-of-way in a one-way couple.

   b. Utilization of this as a couple possibility would simplify the street network near the shopping center west of Mattis Avenue to a great degree. A connection to the Decatur Expressway could be effected from a combination of University and Church Streets extended westward. The development of this connection to University-Church Street could relieve Springfield Avenue of some of the Decatur Expressway volumes (those destined to downtown Champaign). This enables Springfield Avenue's future development as a major street extended westward from Mattis Avenue in Corridor Three. This is highly desirable.

c. The development of Church and University as a one-way couple would fit into the proposed downtown one-way system pattern. The development of Church Street as one-way westbound with University one-way eastbound would enable simplification of intersection movements in the downtown area, in conjunction with the downtown proposal. This, too, is very desirable.

d. At first it appears that the development of Church and University as a one-way couple would be adverse to the extension of a one-way east-west network. This, essentially is not true, if one considers that Green Street and John Street might eventually be developed as a one-way couple south of Springfield Avenue. The capacity provided by utilizing two 36-foot streets, Church and University, as one-way streets, could be such that it would handle the majority of the 1980 level traffic desires in Corridor Three.

e. Future extension of this one-way couple eastward past the central business district would be extremely difficult in view of Church Street's discontinuity.

f. Much of the traffic from the west is destined toward the Champaign central business district. That portion of traffic which does desire to go to either the University or Urbana has several alternatives. One would be to utilize Interstate 74 to the north. (This would be faster than utilizing University Avenue through the center of the Champaign central business area.) There would also be the possibility of utilizing either Kirby Avenue or Shapland Road through a diamond interchange at Interstate 57 and Shapland. Another possibility includes utilizing Mattis Avenue as a distributor street in western Champaign and traversing Springfield Avenue as the primary arterial.

g. The utilization of Church and University as a possible one-way couple would enable placing truck restrictions on these streets passing through the residential districts between Mattis and Prospect Avenue. This, again, ties in with the development of Mattis as a distributor street for the traffic entering Champaign from the Decatur Expressway.

h. Even though Church and University are separated by two blocks' distance, this is not too great for a one-way system.

3. **Church Street-Washington Street Couple.**

a. This couple is adverse to the proposed downtown one-way network in direction of movement.

b. Washington right-of-way and existing pavement are very restrictive, particularly in the area in which relief is most desired, i.e., near Mattis Avenue.

c. This would permit the future development of University and Springfield as a couple if this were desirable, in addition to the possibility of Green Street and John Street becoming a couple. Future extension to the east would be difficult in view of Church Street's discontinuity.

d. Comments relative to the Decatur Expressway connection mentioned under the possibility of Church and University Avenue becoming a couple are also applicable to the Church-Washington Street couple.

e. There are no elementary schools located on Washington or Church Street.

f. The great restrictions in right-of-way make the development of Washington Street as a component of a major street couple almost prohibitive.

g. Washington Street has no connotation as a major street at the present time west of Prospect Avenue.

From the above discussions, it becomes evident that the best possibility for development of a one-way couple in this area would be the utilization of Church Street and University Avenue. Some development of Springfield Avenue to a greater width would still be required to meet 1980 levels of traffic.

PROPOSED MAJOR STREET PLAN

A number of combinations of the alternative streets indicated in Plate 15 were prepared for study prior to proposing a plan for the development of the major street system in Champaign-Urbana. These plans were criticized in view of the foregoing discussion and other considerations of importance in locating a major street network. In selecting major streets and in deciding which of these should be emphasized as primary arterials, maximum guidance was made of observations of existing conditions and proposed conditions relative to major traffic generators and other physical factors affecting the location of major streets. These factors are outlined in Plate 16. Some of the more important items portrayed are:

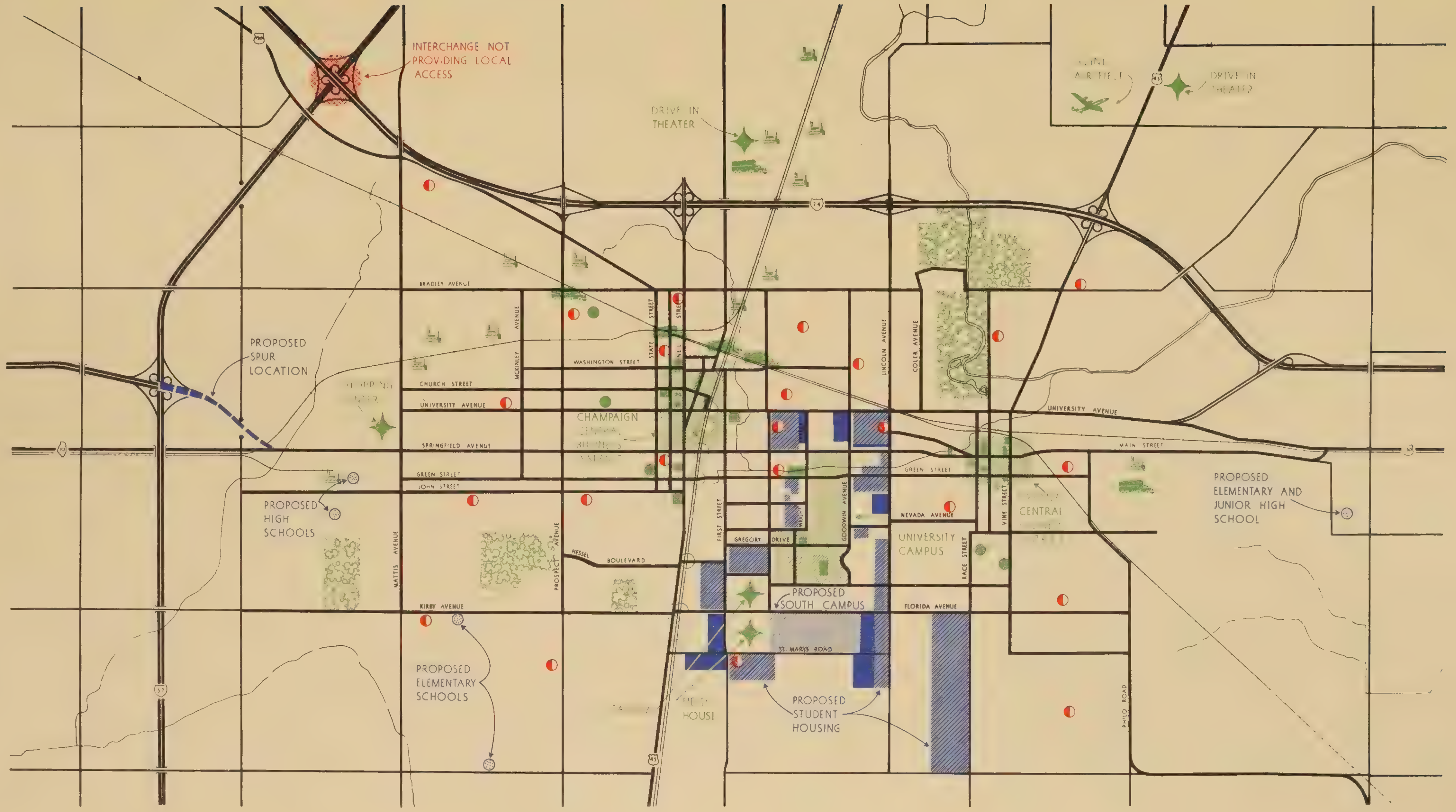
1. The location of existing underpasses of the Illinois Central Railroad tracks.
2. The location of existing and proposed major parking facilities.
3. The location of the central business areas and the central campus areas.
4. The location of such major attractors as the stadium, the auditorium, and the high schools.
5. The location of major truck terminals and major factories.
6. The location of elementary schools.
7. The location of proposed schools.

From detailed study of the factors affecting the location of major streets and the series of plans prepared, the proposed major street plan for long-range development in the Champaign-Urbana Area was detailed. This is indicated in Plate 24 in the Appendix. The referenced cross sections recommended are depicted in Plate 23 and were developed to meet local needs consistent with existing conditions, Illinois Division of Highways standards, and current policy regarding cross-section geometrics. Specific developments for the next 20 years are enumerated in Table A of the Appendix. Typical cross sections indicated are for levels of service from expressways to local service streets, even though collector and local street locations are not included on the major street plan.

Cross Sections A and B lend readily to stage development as it will be indicated in programming developments for the next 20 years. Cross Section B, providing four lanes of traffic with a median, is particularly desirable for primary arterials carrying high volumes of traffic in that it minimizes conflicts involving left turns. By developing half of such a street at a time, development in peripheral areas can more nearly balance against traffic demands for lanes. Tabulated below is a comparison of the relative new construction costs of these various cross sections. It does not include right-of-way or storm sewer costs, however.

Cross Section		Relative Cost (Construction)
A	Limited Access	1.00
B	Primary Arterial, Four Lanes	1.10
C	Primary Arterial, Four Lanes with Parking	1.20
D	Primary and Secondary Arterials	1.00
E	Collector Streets	0.90
F	Local Streets	0.75

Specific recommendations of paved widths for development by 1980 are indicated in Table A of the Appendix. In some instances slight modifications to the typical cross section recommended are necessitated by restrictive right-of-way. On state marked routes, 12-foot lanes are proposed for Cross Section B when right-



FACTORS AFFECTING MAJOR STREET LOCATIONS

CHAMPAIGN-URBANA URBAN AREA

STATE OF ILLINOIS

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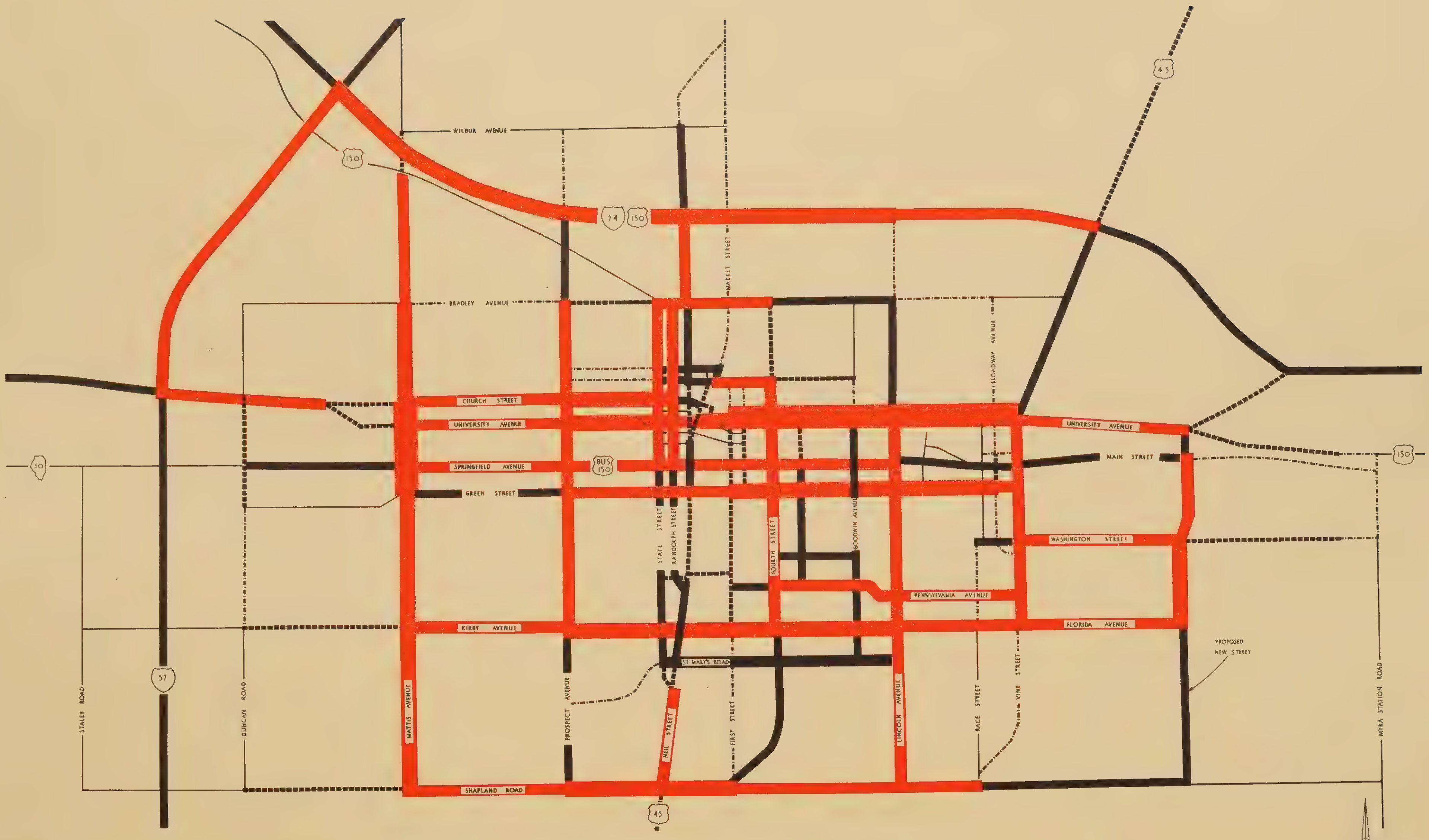
PLATE 17



1980 24 HOUR VOLUMES
CHAMPAIGN-URBANA URBAN AREA
STATE OF ILLINOIS

L E G E N D

24 HOUR VOLUME

───	LESS THAN 5000
─·─·─	5000-7500
▪▪▪▪	7500-10,000
▬▬	10,000-13,000
🟥	13,000-18,000
🟥	18,000-23,000
🟥	OVER 23,000

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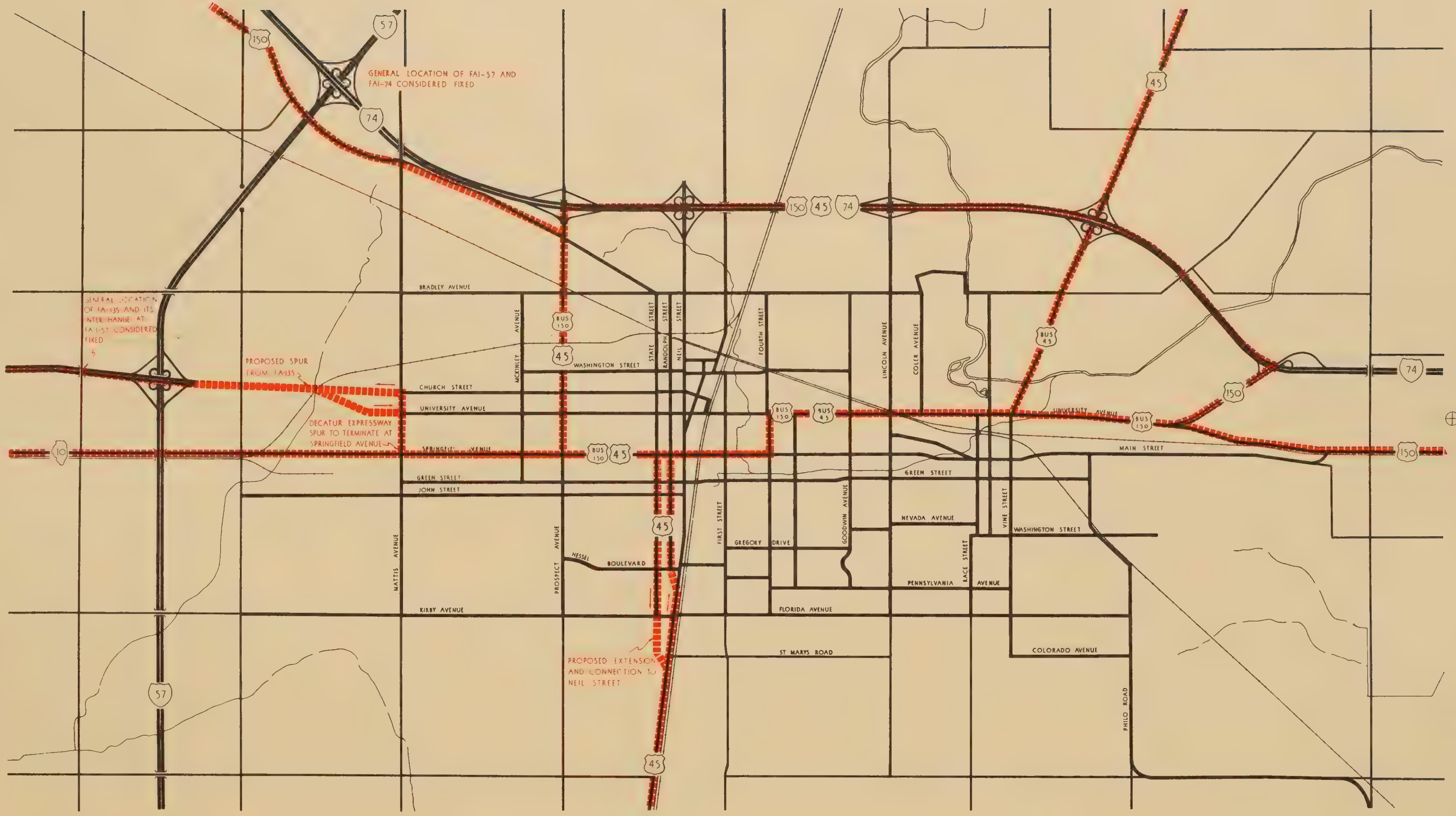

PROPOSED MARKED ROUTES

CHAMPAIGN-URBANA URBAN AREA

STATE OF ILLINOIS

PLATE 18

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of-way permits, in conformance with current Illinois Division of Highways policy on divided highways in urban areas.

Assuming that the required lanes for adequate traffic flow in 1980 are provided, Plate 17 indicates the anticipated 24-hour traffic volumes for the major street network. This was prepared from the 24-hour desire flows in conjunction with the interstate route assignments and an assignment of desire flows to the proposed major street system. In order to test the over-all reasonableness of this flow, a series of cordon lines was established and flows crossing these lines were summed. The same series of lines utilized in checking historic traffic growth and discussed on page 30 was utilized with an added peripheral line enclosing all land anticipated as developed by 1980. This summation of 24-hour volumes was compared to a summation of 1959 24-hour volumes crossing the same lines and was found to be equivalent to a growth of 2.23. This provides an excellent reasonableness check against the projection factor of 2.20. Individual increases at each cordon line varied considerably and are enumerated below:

Cordon Line	Increase 1959 to 1980
A — Champaign CBD	1.93
B — Urbana CBD	1.53
C — University Campus	1.93
D — ICRR	2.47
E — Suburbs	3.07
F — Periphery	1.77
All Lines	2.23

The low increase at line B, the Urbana Central Business Area, is primarily attributed to the fact that the line did not cross Water Street or University Avenue. The proposed developments of those streets will remove much of the 1980 traffic from the streets crossed by line B.

The 24-hour flows estimated assume that the major street network will exist as proposed. The omission of any segment of the proposed system, or development of the network to a degree different from that proposed, could result in significantly different volumes on any specific street.

Marked Route Locations

The proposed locations of the State and U. S. marked routes through the Champaign-Urbana area, in addition to the interstate routes, are indicated in Plate 18. Prior to the construction of Interstate 57 and sections of marked routes, route locations should remain essentially as they now exist internal to the city with the exception of U. S. 45.

The provision of the interstate routes provides much relief in the form of bypass facilities. Approximately 90 percent of 1980 through traffic volumes will utilize the interstate routes entirely. The effect of the interstate system with respect to providing relief to Champaign-Urbana city streets can be realized by considering that if the system were now in operation, the existing 24-hour traffic volumes on University Avenue, for instance, would be reduced by approximately 9 percent.

Illinois Route 10. The proposed location of Illinois Route 10 will remain the same as it now exists with the exception that it is recommended to terminate Illinois 10 at Randolph Street. Illinois Route 10 now terminates at Vine Street.

Decatur Expressway Spur. The proposed location of the Decatur Expressway Spur is to generally traverse directly eastward from FAI 57 on new construction to Mattis Avenue in alignment with the proposed Church-University one-way couple. Details of this connection are shown by Reconnaissance Map A. At this point (Mattis Avenue), the signed route should turn south and traverse Mattis Avenue to Springfield Avenue and be terminated there. The primary reasons for this routing are to remove truck traffic from the University-Church couple and to divert traffic destined east of the Champaign central business district to Springfield Avenue. In effect, Mattis Avenue will be utilized as a distributor street between Bradley and Kirby Avenues.

U. S. Route 150. The proposed location for U. S. 150 utilizes two routings as indicated in Plate 18. These basically are the same locations which U. S. 150 now traverses. Business U. S. 150 is proposed for location along Prospect, Springfield, and University Avenues, whereas U. S. 150 will utilize Interstate 74 bypassing the congested areas. The vast majority of the volumes of traffic of Business U. S. 150 (over 90 percent) will have origin or destination in the Champaign-Urbana area. Thus there will not be an introduction of significant through traffic on the proposed location of this marked route. This is particularly pointed out in view of the fact that Burnham Hospital is located at the corner of Fourth Street and Springfield Avenue.

Detailed consideration was given to selecting the proposed routing of Business 150 from three alternatives. In addition to the proposed location on Prospect Avenue, consideration was given to utilizing Mattis Avenue and North Neil Street.

Relative to the question of Mattis Avenue instead of Prospect, the following observations are noted:

1. Based upon the 1980 projection of the origin-destination data, the average daily through traffic interchange from U. S. 150 to the northwest to the other routes is insignificant (all volumes are less than 50 vehicles per day).
2. Of the 3,400 daily trips from U. S. 150 destined to Champaign or Urbana, approximately 350 are destined west of Mattis Avenue and 750 between Mattis and Prospect Avenue.
3. The corridor in which Mattis Avenue is located has a general deficiency of four lanes at the 1980 level while that corridor including Prospect Avenue has a deficiency of two lanes. This deficiency along the Prospect corridor assumes parking on Prospect Avenue in those areas where it now exists as a 40-foot pavement.
4. Mattis Avenue traverses an existing industrial area with great potential for further development of additional industries.
5. Route 45 is proposed for location on Prospect Avenue from Interstate 74 to Springfield Avenue. This route should not be relocated to Mattis Avenue in view of the circuity that would be introduced.

The alternative of utilizing Neil Street in lieu of Prospect Avenue invokes the following comments:

1. Utilization of Prospect Avenue enables distribution of traffic destined to the Champaign area from the west prior to entering the central business district.
2. A minimum reconstruction expenditure is required in widening Prospect as compared to the necessary improvements involved in utilizing Neil Street because of the desirability of shifting the marked route from Neil Street to the Randolph-State Street couple in order to bypass the heart of the central business district.
3. Prospect Avenue is better adapted to utilizing the same location for Business U. S. 150 and Route U. S. 45. U. S. 45 should not be routed through the central business area as would be required utilizing Neil Street. Prospect Avenue bypasses the central business area without introducing unwarranted circuity for U. S. 45.

From the 1980 origin-destination projection data, it is estimated that the over-all level of traffic is such that the specific location of the marked route is not a matter which determines to any significant degree the relative levels of traffic on any of these streets. In view of all these factors, the primary considerations in locating the marked route becomes one of economy and convenience. This dictates that Business U. S. 150 be located on Prospect Avenue in conjunction with U. S. 45.

U. S. Route 45. It is proposed that U. S. Route 45 be re-routed so that, as it enters from the northeast, it will follow Interstate 74 to the Prospect Avenue interchange, follow Prospect Avenue south to Springfield Avenue, follow Springfield Avenue east to the Randolph-State Street one-way couple, then south utilizing this couple to join present U. S. 45 on Neil Street.

The Springfield Avenue underpass at the Illinois Central Railroad tracks was reconstructed this summer to provide additional vertical clearances. Even with the added clearances, this underpass is still sub-standard for a major U. S. marked route. It only provides a clearance of 12 feet 9 inches. In order to provide a route with the necessary vertical clearance to adequately accommodate trucks, several considerations of routings for truck traffic were studied in detail. The proposed location utilizing Interstate 74 and Prospect Avenue is recommended for the following reasons:

1. It is part of the existing Federal Aid Primary System.
2. Ample clearance is provided for crossing the Illinois Central Railroad in that FAI 74 overpasses the tracks.
3. It removes through truck traffic from the central business area while not requiring unnecessary circuity.
4. Additional construction expenses are not involved in view of the proposed location of Business U. S. 150.

It is proposed that this routing of U. S. 45 be programmed in two stages. Immediate development should utilize the proposed routings with the exception of the State-Randolph Street couple. Until development of this one-way couple, Neil Street should be utilized as U. S. 45.

The second phase of programming should be implemented upon development of State and Randolph Streets south of Springfield Avenue including the connections to Neil Street. At this point, the location of U. S. 45 should be shifted to utilize the State-Randolph couple.

It is recommended that Business U. S. 45 be the route designation for that portion of present U. S. Route 45 entering from the northeast at the U. S. 45-Interstate 74 interchange southeast to University Avenue, then west along University Avenue to Fourth Street, then south on Fourth Street to Springfield Avenue, then west on Springfield Avenue to Randolph Street.

Long-Range Plan

The proposed major street plan for the Champaign-Urbana area is indicated in Plate 24 and in general provides the following:

1. The development of a parkway facility along the location of Shapland Road, from Interstate 57 to a point south of the intersection of Spur 11 with University Avenue (a new street). Left turns onto and off this street should be limited to major street intersections by providing a variable median of approximately 16 feet.
2. The development of a parkway-type facility from this termination of Shapland northward to the intersection of Spur 11 with University Avenue, thus completing a circumferential facility of a high capacity level ringing the Champaign-Urbana Urban Area. This, in addition to the Shapland Road development, should be limited access and utilize a variable median. (See Reconnaissance Map D.)
3. Long-range development of a diamond interchange at the intersection of Shapland Road and Interstate 57. The traffic call for this interchange does not warrant its construction prior to 1975; however, it is necessary that the right-of-way be purchased as soon as possible in preparation for the development of this interchange at a future date.
4. The development and extension of a series of one-way streets in order to utilize to the maximum degree practical the existing facilities in the Champaign-Urbana area. In particular, the following are enumerated:
    a. The development of a couple utilizing Washington Street eastbound and Columbia Avenue westbound.
    b. The development of Church Street and University Avenue as a one-way couple from Mattis Avenue to downtown Champaign. It is emphasized that this entire development is not proposed for immediate implementation. The 1980 traffic estimates indicate that Springfield Avenue, developed as a four-lane divided route, will be inadequate for anticipated traffic volumes, thus dictating that additional relief be provided in the vicinity between Mattis and Prospect. In view of the over-all requirements for the entire urban area, this relief can most economically be obtained through a one-way couple utilizing Church Street westbound and University Avenue eastbound.

   c. The continuation of the Randolph-State Street couple southward with construction of State Street to form a couple with Neil Street south of Hessel Boulevard. (See Reconnaissance Map C.)
   d. The development of First and Second Streets as a one-way couple between Washington Street and Green Street.
   e. The utilization of Chester Street eastbound and Logan Street westbound to provide additional railroad underpass capacities in addition to intersection flow improvements. This couple should be extended utilizing Clark and White Streets from First Street east to Wright Street. (See Reconnaissance Map E.)

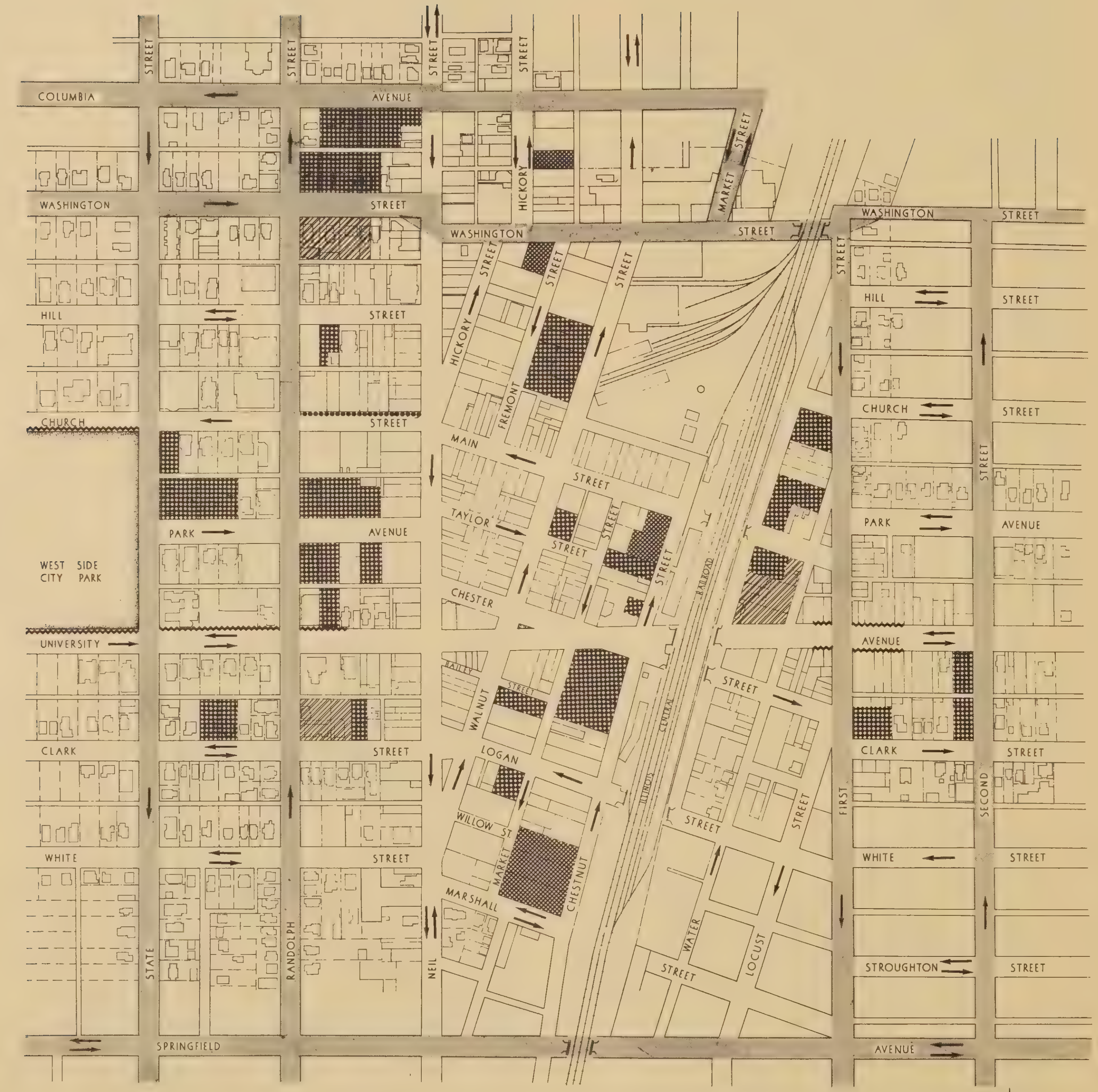
5. General improvements for Illinois Central Railroad underpasses and crossing as follows:
   a. The Washington Street underpass be improved in order to provide four lanes of traffic and to minimize the existing hazard associated with the sight distance restrictions.
   b. The St. Mary's Road underpass be developed to provide four lanes of moving traffic.
   c. Shapland Road be developed with an underpass providing four lanes of moving traffic.
   d. Bradley Avenue eventually be developed with an underpass as finances permit. Due to the existing grade crossings this does not carry a high priority for development prior to 1980 and is not included in the 20-year program.
6. The development of Lincoln Avenue as the major distributor of traffic from FAI 74 to the University of Illinois and to western Urbana.
7. Development of Mattis Avenue as a major distributor of traffic in western Champaign. Its grade separation with FAI 74 should enable development of four lanes. Long-range planning indicates grade separations with the Illinois Central Railroad and New York Central Railroad.
8. Provision of a four-lane grade separation between Duncan Road and the Decatur Expressway Spur. Long-range requirements will be for an interchange; hence, as the land in the immediate vicinity is developed, the appropriate local governmental agency should insure that adequate land is reserved to permit construction of necessary elements to ultimately convert the grade separation to an interchange. In order that no operational problems be created between the Duncan Road interchange and the Interstate 57 interchange, the Duncan Road interchange must be developed so as to provide all moves while utilizing only the northeast and southeast quadrants. A right-of-way line of Duncan Road north and south, of 600 feet east along the Decatur Expressway Spur, and then a linear connection of these end points will be sufficient to allow the future ramps.

In many instances in the Champaign-Urbana area at the present time proper delineation of traffic lanes, in particular left-turn lanes at intersections, would greatly facilitate flow characteristics. There are numerous streets in the area with pavement widths of approximately 36 feet which could be utilized to greater advantage at intersections by clearly indicating dividing lines for opposite directions of traffic flow and by providing a designated left-turn lane. In conjunction with this, parking restrictions should be utilized to provide additional laneages at major street intersections. The generally recommended length of such restriction varies from 100 feet to 200 feet, depending upon the specific turning movements at the intersection.

In conjunction with developing the proposed major street network through construction efforts during the next 20 years, it is also necessary to properly utilize traffic control devices at intersections. The following items are specifically mentioned with regards to the development of the designated major streets.

1. Stop signs should be provided on all minor streets at intersections with major streets. There should not be four-way stops at **any** minor street intersection

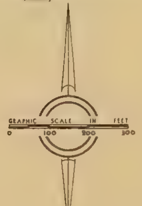
PLATE 19



PROPOSED TRAFFIC PATTERN
CENTRAL BUSINESS DISTRICT
CHAMPAIGN, ILLINOIS

LEGEND

▦	CUSTOMER PARKING LOTS	→	DIRECTION OF TRAVEL
▨	EMPLOYEE PARKING LOTS	〰	REMOVE PARKING
▦	PROPOSED PARKING LOTS (1958)	●●●●●●	DOWNTOWN BUS ZONE
▬	DISTRIBUTOR STREETS		



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with a major street. An example of such an existing condition is at Bradley Avenue and Harris Street.

2. Major street intersections with other major streets should be signalized as soon as possible consistent with actual traffic demands according to accepted signalization warrants. Four-way stops should not be utilized at such intersections. Specifically, the following intersections are enumerated for consideration for signalization at the earliest date possible.
    a. University Avenue at Prospect Avenue
    b. Church Street at Prospect Avenue
    c. Bradley Avenue at Prospect Avenue
    d. Bradley Avenue at Neil Street
    e. Lincoln Avenue at University Avenue
    f. University Avenue at Vine Street
    g. Lincoln Avenue at Pennsylvania Avenue
    h. Fourth Street at Green Street

3. Signals at major street intersections should be phased to facilitate progression along the streets at reasonable speeds. The recommended minimum cycle length is 60 seconds. Of course, more efficient utilization of intersection capacities is realized with a longer cycle, and consideration should be given to 70-second cycles at some intersections. (University and Randolph, for instance.)

4. Use of special cycle phases should be minimized. Such phases are exclusive pedestrian intervals and left-turn indications. This is not to be construed as meaning that the existing left-turn phases are not warranted, but that careful consideration and study should be directed towards all intersections now utilizing left-turn indications and all intersections under consideration for left-turn indications. Efforts should be made to direct left turns at primary streets rather than to penalize through traffic movements at all intersections by providing exclusive left-turn phases.

Champaign Central Business District. Plate 19 indicates the proposed flow for adoption in the Champaign Central Business District and generally involves an extension of the existing one-way network with a few modifications.

Washington Street should be continued as a two-way street but with parking restricted until traffic demands exceed the practical capacities available at intersections in the central business district. At such time, Washington Street should be developed as a one-way east portion of a couple with Columbia Avenue. If it is desired to retain parking, Washington should be made one way now.

Church-Main Street should be immediately developed as a one-way westbound section in conjunction with Park Avenue and University Avenue forming the eastbound section for the areas indicated in the plate.

The extension of Church and University as a one-way couple to the west should continue to Prospect Avenue at the present with further extension to follow the development of the Decatur-Expressway Spur when traffic volumes so dictate. Immediate developments to University Avenue to ease existing flow conditions and to provide transition from one-way to two-way operation are noted below. This basically involves simple channelization in conjunction with parking restrictions at key intersections. The following developments are enumerated from west to east:

1. Two lanes of traffic with parking on the right should be permitted west of State Street. Parking restrictions are necessary for approximately 50 feet prior to the State Street intersection.
2. To the east of State Street one lane should be provided for left turning westbound traffic with eventual provision of two lanes by restricting parking on the north side of University Avenue. In this arrangement use should be made of an offset center line. This will enable providing three lanes of traffic eastbound and parking on the south side of University. For the next few years the turn requirements from University westbound to State Street southbound may not require

more than the one lane. However, this can best be determined after the proposed flow pattern has been in operation for a short period of time.

3. At Randolph Street it is necessary to provide a left-turn only lane for eastbound traffic on University. In addition, two through lanes should be provided. East of Randolph Street channelization should be utilized to screen the left-turn lane on the opposite side of Randolph Street from westbound University Avenue traffic. This will require parking restrictions for approximately 150 feet on the north side of University Avenue from Randolph Street eastbound.
4. Between Randolph and Neil Street two lanes of traffic should be provided for each direction of flow. Parking can be permitted on both sides of the street for the next few years.
5. The intersection of Chester Street, Chestnut Street, and University Avenue should be channelized to direct traffic smoothly and to provide a left-turn lane for eastbound University Avenue traffic into northbound Chestnut Street.
6. The First Street-University Avenue intersection should also be channelized to provide a protected left-turn for westbound University Avenue traffic turning into Southbound First Street. In conjunction with this, parking restrictions would be required for approximately 100 feet on each side of the intersection on both sides of the street.

The basic philosophy in designating left-turn lanes and providing flow lanes along University Avenue has been to make maximum use of the one-way distributor couples designated in Plate 19. It is desirable that eastbound traffic on University Avenue destined for the central business area should utilize the State-Randolph Street couple in order to arrive at parking lots or other streets to carry them to their destination. Similarly, westbound traffic approaching the area should utilize the First-Second Street couple as much as possible for the same purposes.

Chester and Logan Streets should be developed as a one-way couple in order to simplify intersection flows, particularly on University Avenue near Chestnut Street and at First Street. This couple should be extended utilizing Clark Street and White Street eastward to Wright Street. The primary purpose of this extension is to simplify intersection flow at the First-Second Street couple and at Fourth Street. It will also enable immediate development of the First-Second Street couple from Washington to Clark Street.

Hickory and Fremont Street should be developed as a one-way couple with Hickory being northbound, just opposite from its existing condition. This change is highly desirable to permit easy access to uses fronting on Hickory Street. This can be provided by a simple alteration of the existing islands screening a left-turn movement from Neil-Hickory Street on to Main Street. The left turn, of course, would be prohibited by the development of Church-Main as one-way westbound.

First and Second Streets should be developed as a one-way couple from Clark to Washington Street. Further extension of this couple is dependent upon the programming of the development of Second Street, which should be undertaken in the near future.

The intention in the development of the network in downtown Champaign is to provide a series of high level streets ringing the central business district to act as a traffic distributor system and eliminate unnecessary movements in the heart of the business district. This network is indicated in Plate 19.

Urbana Central Business District. The corridor analysis indicates that the long-range traffic requirements in the Urbana Central Business District can be provided with existing facilities. The proposed construction improvements are recommended as planning requirements in order to provide a street network facilitating flow around the heart of the business district. Immediate improvements should be directed towards more careful delineation of traffic lanes and towards the provision of left-turn lanes, through lane lining and parking restrictions at major street intersections where only two lanes for traffic flow are now provided and adequate pavement widths exist.

Detailed consideration should be given to the elimination of the pedestrian phase of the signal cycles at the intersections of Race and Broadway Streets with Springfield-Main Street. There are certain times of the week when it appears that special pedestrian cycles are necessary; however, during the vast majority of the time the provision of such separate phases causes unwarranted delay to both pedestrians and vehicular traffic. Greater flexibility of control could be provided by installing multidial controllers and thus designating separate pedestrian cycles during those times when such are actually warranted. Until a time when this type of control can be installed, it is recommended that the special cycle be eliminated.

The diagonal parking now permitted on Springfield-Main Street from Cedar to Bennett Avenue presents a severe potential accident hazard to vehicular traffic. In addition, it causes excessive delay to traffic movements through the area. The provision of an adequate circulation system around the central business area could relieve Springfield-Main Street of much of its existing volumes. If such relief is not provided soon, it will be necessary to remove diagonal parking in order to adequately accommodate the increasing traffic volumes. Adequate off-street parking facilities are available within two blocks distance from the central section of the business district; thus the removal of diagonal parking would not present a severe reduction in parking space availability. Parallel parking could, of course, be retained.

The early development of Green Street, Water Street, and Vine Street is highly desirable to reduce traffic circulation in the central business district. Particular emphasis should be placed upon developing Green Street and Vine Street as preferential streets with signalization as soon as possible. This will reduce delay time considerably and encourage the utilization of these streets by through traffic with the concurrent reduction of this traffic from nearby streets. Development of Water Street from Race to Broadway is also highly desirable to provide a continuation of the existing development from Broadway to Vine. Extension of Water Street east from Vine Street, as indicated in Plate 24 as a planning call, is recommended for long-range development but does not have high enough priority for programming for development prior to 1980. If additional funds become available this development would be an excellent investment.

Consideration was given to recommended long-range development of Water Street to Central and Central Street from University Avenue to Green Street. This development is not indicated for the following reasons:

1. Estimates indicate the cost for providing this facility overrides the benefits that would be derived in view of over-all traffic requirements in Urbana.
2. The development of Central Street from University to Main would require crossing the New York Central Railroad in an area of extensive trackage.
3. Central Street could best be extended southward by connecting to Birch Street. Inadequate right-of-way is available for development of this Street.
4. Traffic requirements can be met without this development.

University of Illinois Campus. One of the key factors in the high vehicular volume increases in the campus area is the anticipated increase in vehicular registration per student (see pages 20 and 21). This increase is based upon the established trends during the past decade including the restrictions placed on student use of motor vehicles. The volumes thus reflected are those to be anticipated if the current restriction policies are continued. More lax restrictions would mean a much greater increase in student vehicles, and therefore higher volumes in the vicinity of the campus than those indicated herein.

The provision of special buses within the central campus areas and connecting the proposed south campus with the existing north campus is highly desirable. At the present time there is a proposal to provide a special bus routing in the campus area which would be financed on a semester basis and would provide the type of transportation recommended. This system should be further developed in conjunction with student vehicle restrictions and should be further expanded to provide greater coverage as the campus area is extended.

The recommended developments in the campus area provide for an inner and outer loop of major streets to ease flow conditions in the area. This inner loop should consist of Sixth Street, Peabody Drive, Goodwin Avenue and Green Street for the existing main campus area. The outer loop for this area would consist of the primary arterials, Fourth Street, Kirby-Florida Avenue, Lincoln Avenue and University Avenue. For the south campus area it is proposed that Fourth Street, St. Mary's Road, Lincoln Avenue and Kirby-Florida Avenue be developed as major streets circumventing the area.

It is recognized that one of the major problems in the campus areas is pedestrian-vehicular conflicts. There are two particular areas which should receive special treatment towards minimizing this. The proposed development of Green Street between Wright and Goodwin will aid greatly in minimizing pedestrian hazards. However, the existing condition in which there is little control over points at which students are to cross Green Street will continue unless positive action is taken to clearly define crossing points. It is recommended that three steps be taken to provide this necessary control:

1. Provide hedge plantings along the sidewalks in order to prevent crossings between intersections.
2. Clearly define cross walks at intersections and provide walk-wait indications at signalized intersections.
3. Provide a special pedestrian overpass near the Illini Union Building in order to provide maximum protection and ease of movements.

The special pedestrian crossing should be developed with maximum provision of light and air in order to encourage its use. It therefore is recommended that this be an overpass and not an underpass.

If the development of the south campus area is such that high volumes of pedestrian interchange are realized between the south and north campus, consideration should be given to providing pedestrian overpasses of Kirby-Florida Avenue. Although the exact location of such will be dependent upon building locations and utilization, the most probable areas for consideration are near Fourth Street and near Goodwin Avenue. These overpasses should also provide a maximum degree of light and air to encourage their use.

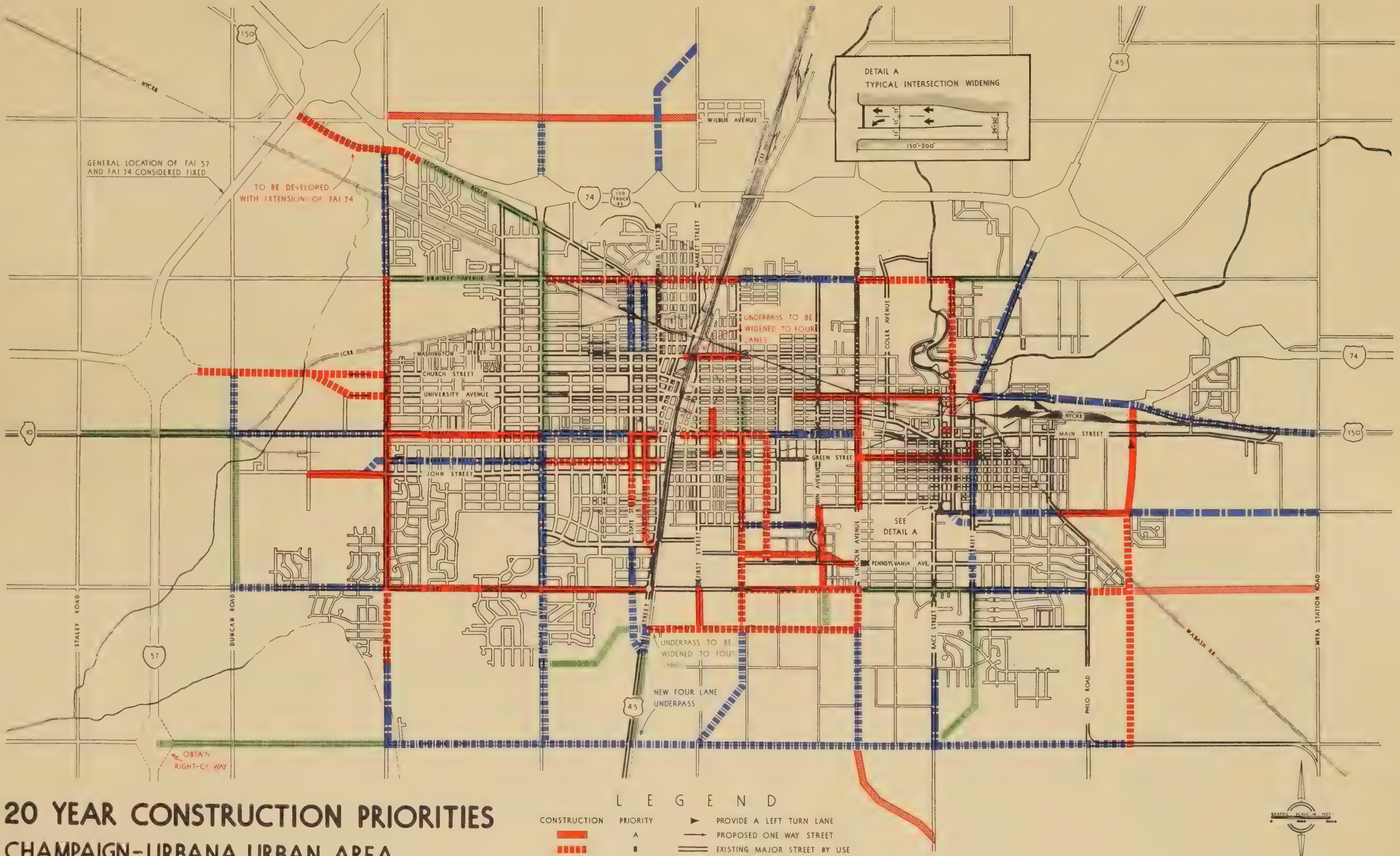
Programming Developments

In order to accomplish the proposed construction improvements during the next 20-year period, it is of utmost importance that a specific plan be followed and that periodic improvements be developed in order to realize the greatest economy. One guide in differentiation of necessary items for development by 1980 is provided by the indication on Plate 24 of traffic call for laneage by 1980 and planning call for development. A further grouping of developments is necessary to guide construction efforts in order to provide an adequate system at each stage of development. Detailed consideration has, therefore, been given to establishing priorities of construction. These are indicated in Plate 20. In designating the priorities for a particular development, the following items were considered:

1. Traffic necessity
2. Development of contiguous land
3. Existing conditions of pavement
4. Governmental jurisdiction regarding cost
5. Cost
6. Stage construction potentiality
7. Other developments programmed in the area.

Those sections designated in Plate 20 are considered necessary for development during the next 20 years. In addition to these construction items, it will be necessary to resurface certain sections as indicated in Table A of the Appendix. It is specifically noted that the anticipated requirement for development of Shap-

PLATE 20



20 YEAR CONSTRUCTION PRIORITIES
CHAMPAIGN-URBANA URBAN AREA
STATE OF ILLINOIS

LEGEND

CONSTRUCTION	PRIORITY
🟥	A
▮▮▮▮▮	B
▮▮▮▮▮	C
▮▮▮▮▮	D
▮▮▮▮▮	E

►	PROVIDE A LEFT TURN LANE
→	PROPOSED ONE WAY STREET
═	EXISTING MAJOR STREET BY USE
▨	ROW ACQUISITION
🟥	STAGE CONSTRUCTION
●●●●●●	NOW UNDER CONSTRUCTION

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land Road to its full proposed cross section will not be required by 1980. Thus it is proposed that those sections indicated in Table A for development as 24-foot pavements be constructed such that the remaining 24-foot pavement sections can be added at a future date.

There are some components of the major street plan which are desirable for construction during the next 20 years but which are omitted due to their low priority compared to other improvements. If additional funds become available, these streets can then be programmed for development. Following are the most important of these sections:

1. Bradley Avenue west of Prospect Avenue
2. Bradley Avenue from Broadway to U. S. 45
3. Completion of Shapland Road to full cross section
4. Main Street eastward from the proposed new street in eastern Urbana
5. Florida Avenue extended eastward in Urbana.

COST ESTIMATES

Detailed preliminary engineering cost estimates for all of the sections proposed for improvement are not within the scope of this study. However, it is mandatory that good estimates of over-all costs be provided in order to present realistically the required improvements and to guide in programming developments during the next 20 years.

The general procedure utilized has been to estimate construction costs based upon typical cross sections and utilization of aerial photographic coverage of the area and to estimate right-of-way costs with guidance from local realtors.

For the marked routes, construction estimates were prepared in detail. Typical cross sections and unit costs were prepared with close liaison with the Illinois Division of Highways Paris District Office and the Cities of Champaign and Urbana. From these data estimates of pavement construction costs were made for each section of development, in addition to estimates for the following:

1. Clearance and demolition work.
2. Utility adjustments based upon an assumed average condition.
3. Grading, drainage and minor structure costs for new construction utilizing an assumed average condition.
4. Sidewalks removed and/or constructed as determined from aerial photographs.
5. Street lighting proposed for those urban sections on which modern facilities are not currently in existence or being planned for development.
6. Intersection signalization at all major streets which currently do not have automatic traffic control devices.
7. Inclusion of an additional quantity to cover engineering and contingencies.
8. Right-of-way costs.

For the remaining proposed construction, estimates were prepared by determining base, surfacing and curb costs utilizing the typical cross section estimates. From a study of the total estimated cost of construction for marked routes it was estimated that the average additional expenditures for the remaining streets would be approximately 33 percent. This percentage includes preliminary engineering costs and was utilized to derive a total estimated construction cost. This value in conjunction with the estimated costs for right-of-way provides the total estimated cost for the development of each section of the major street system.

Sumarized below are the estimated costs for improving the proposed major street and highway network components indicated in Plate 20. The estimates are categorized according to construction priorities as well as by Governmental jurisdiction. Details of the estimated cost of pavement construction for various sections of the major street network are provided in Table A of the Appendix.

COST ESTIMATE SUMMARY

Priority	Federal Aid Primary	Federal Aid Secondary	Champaign*	Urbana*	Total
ROW	$ 321,000	$ 18,000	$ 186,000	$ 231,000	$ 756,000
A	905,000	660,000	1,210,000	1,119,000	3,894,000
B	1,405,000	300,000	1,620,000	1,230,000	4,555,000
C	687,000	860,000	1,630,000	1,030,000	4,207,000
D	822,000	270,000	1,640,000	960,000	3,692,000
E	1,024,000	88,000	1,150,000	690,000	2,952,000
TOTAL	$5,164,000	$2,196,000	$7,436,000	$5,260,000	$20,056,000

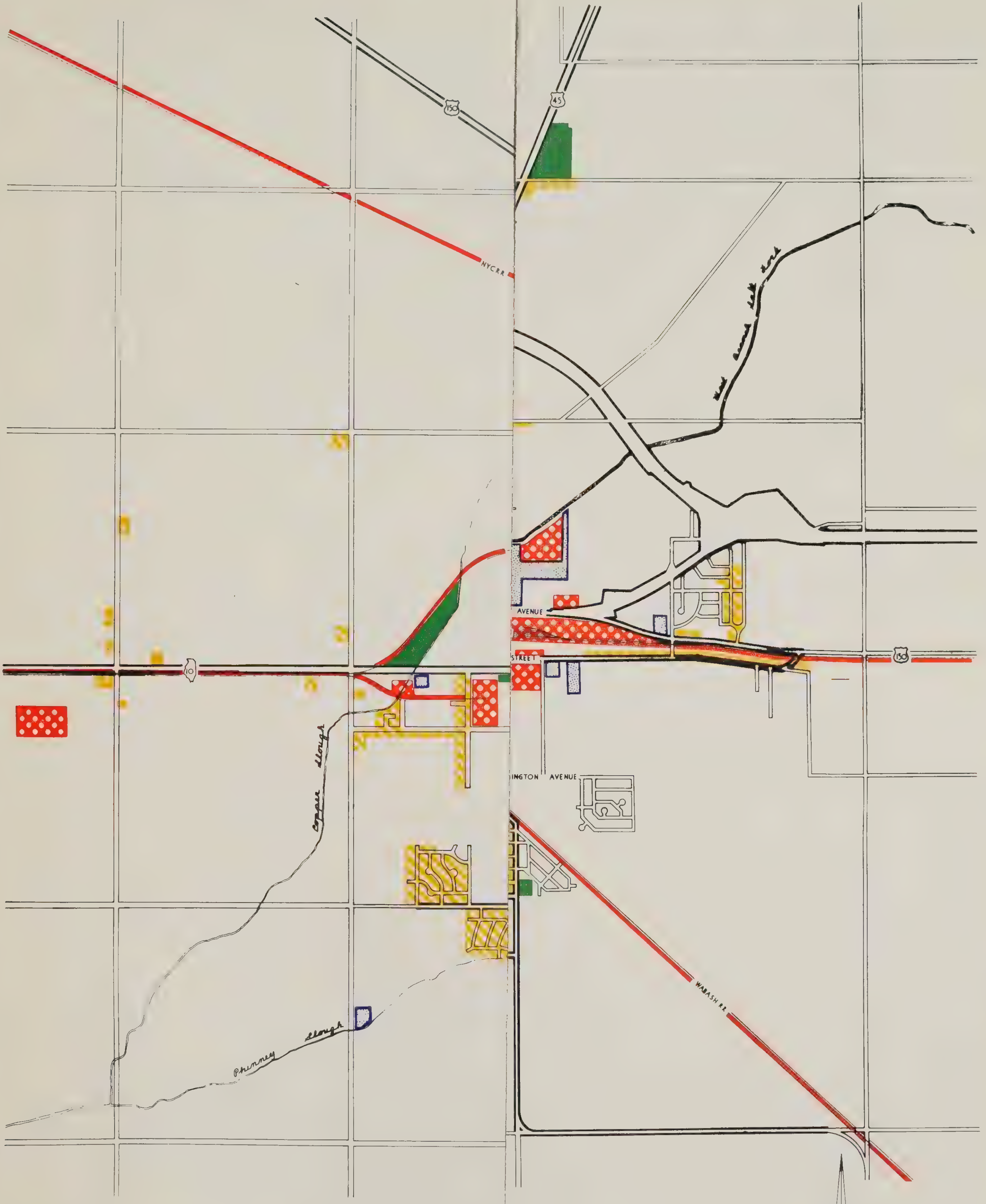
*Exclusive of Federal Aid Primary and Secondary Costs.

The construction costs indicated include costs of providing left-turn lanes at locations as proposed in Plate 20 and for major structures as follows:

1. Reconstruction of the Washington Street underpass of the Illinois Central Railroad to accommodate four lanes of traffic at an estimated cost of $200,000.
2. Reconstruction of the St. Mary's underpass of the Illinois Central Railroad to provide four lanes at an estimated cost of $150,000.
3. New construction of an underpass of the Illinois Central Railroad tracks at Shapland Road extended for an estimated cost of $200,000.
4. Overpassing the Illinois Central Railroad by the Decatur Expressway Spur for an estimated cost of $215,000.
5. Overpassing Duncan Road by the Decatur Expressway Spur for an estimated cost of $125,000.

APPENDIX

Plate 21. 1960 Land Use
Plate 22. 1980 Land Use
Plate 23. Recommended Cross Sections
Plate 24. Major Street Plan
Table A. Major Street Tabulations
Table B. Night and Day Population Distribution
Table C. 1980 Total Trips Summary
Table D. 1980 Average Daily Total Traffic Interchange Between Zones
Table E. 1980 Average Daily Total Traffic Interchange Between Stations and Internal Zones
Plate 25. Analysis Zones
Table F. Relative Comparison of Major Streets
Reconnaissance Maps



1960 LAND USE

CHAMPAIGN-URBANA URBAN

STATE OF ILLINOIS

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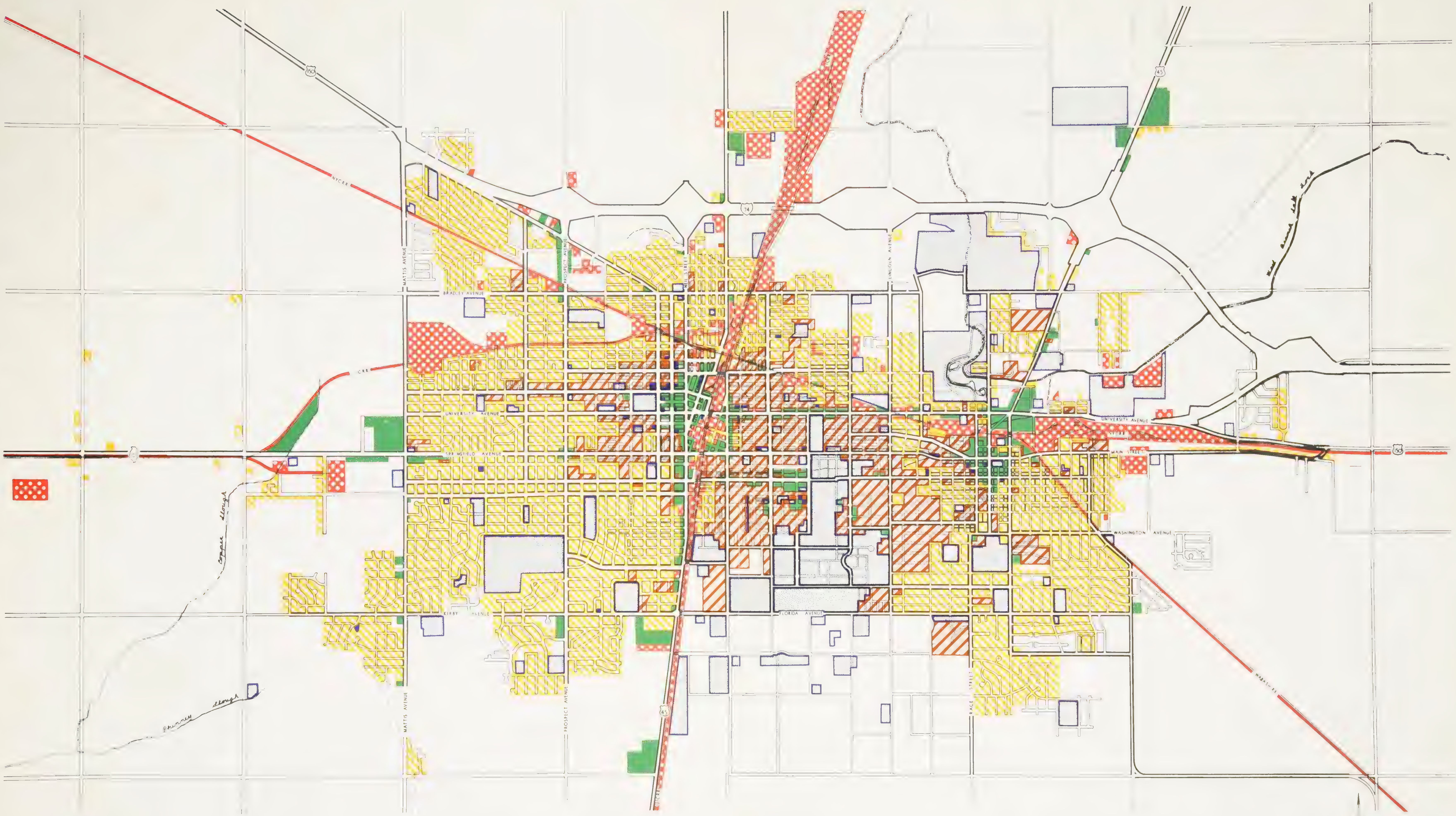

1960 LAND USE

CHAMPAIGN-URBANA URBAN AREA

STATE OF ILLINOIS

LEGEND

- ▨ SINGLE FAMILY RESIDENCE
- ▨ MULTIPLE FAMILY RESIDENCE
- 🟩 COMMERCIAL
- 🟥 INDUSTRIAL AND RAILROAD
- ☐ PUBLIC AND SEMI-PUBLIC

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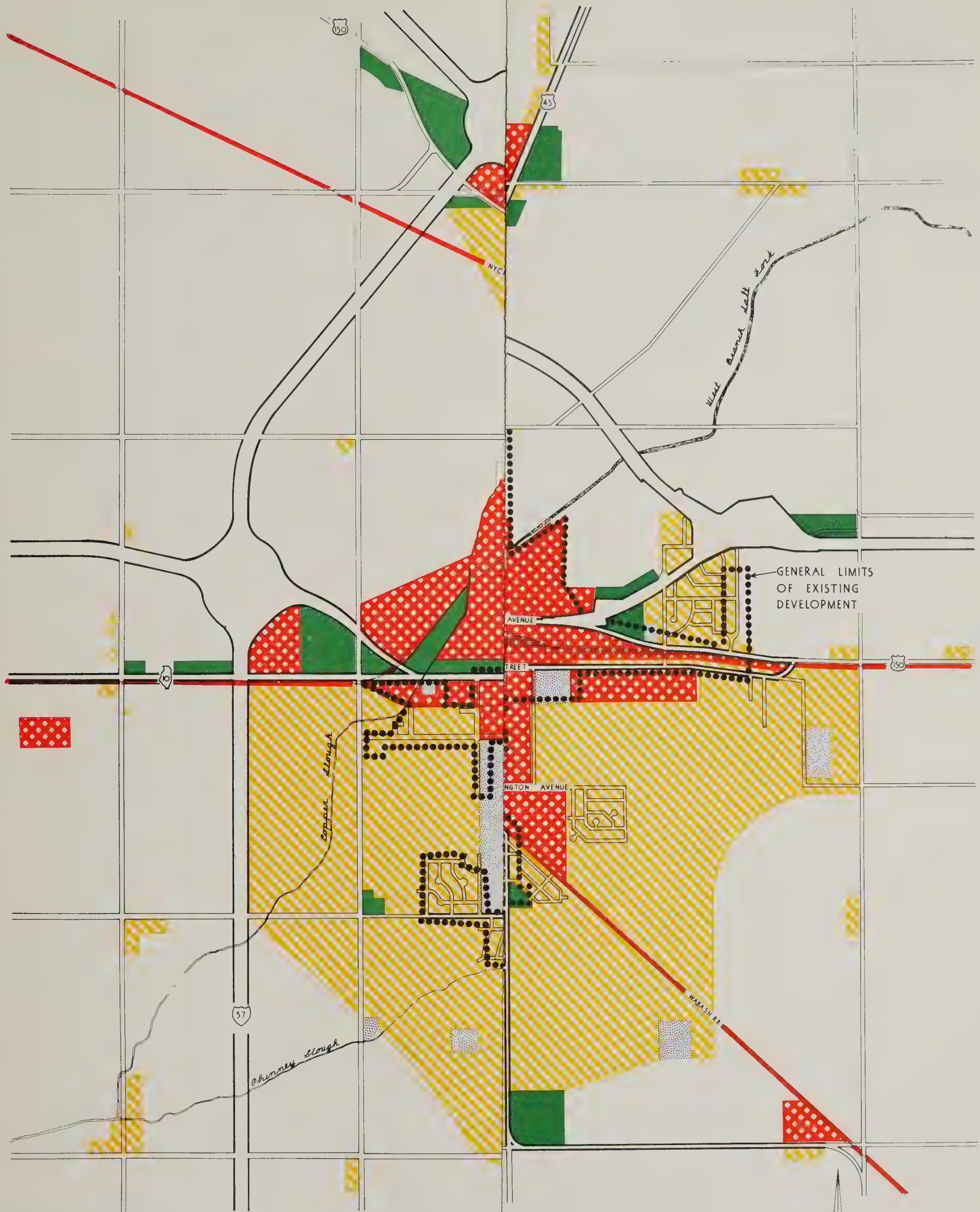

1980 LAND USE

CHAMPAIGN-URBANA URBAN

STATE OF ILLINOIS

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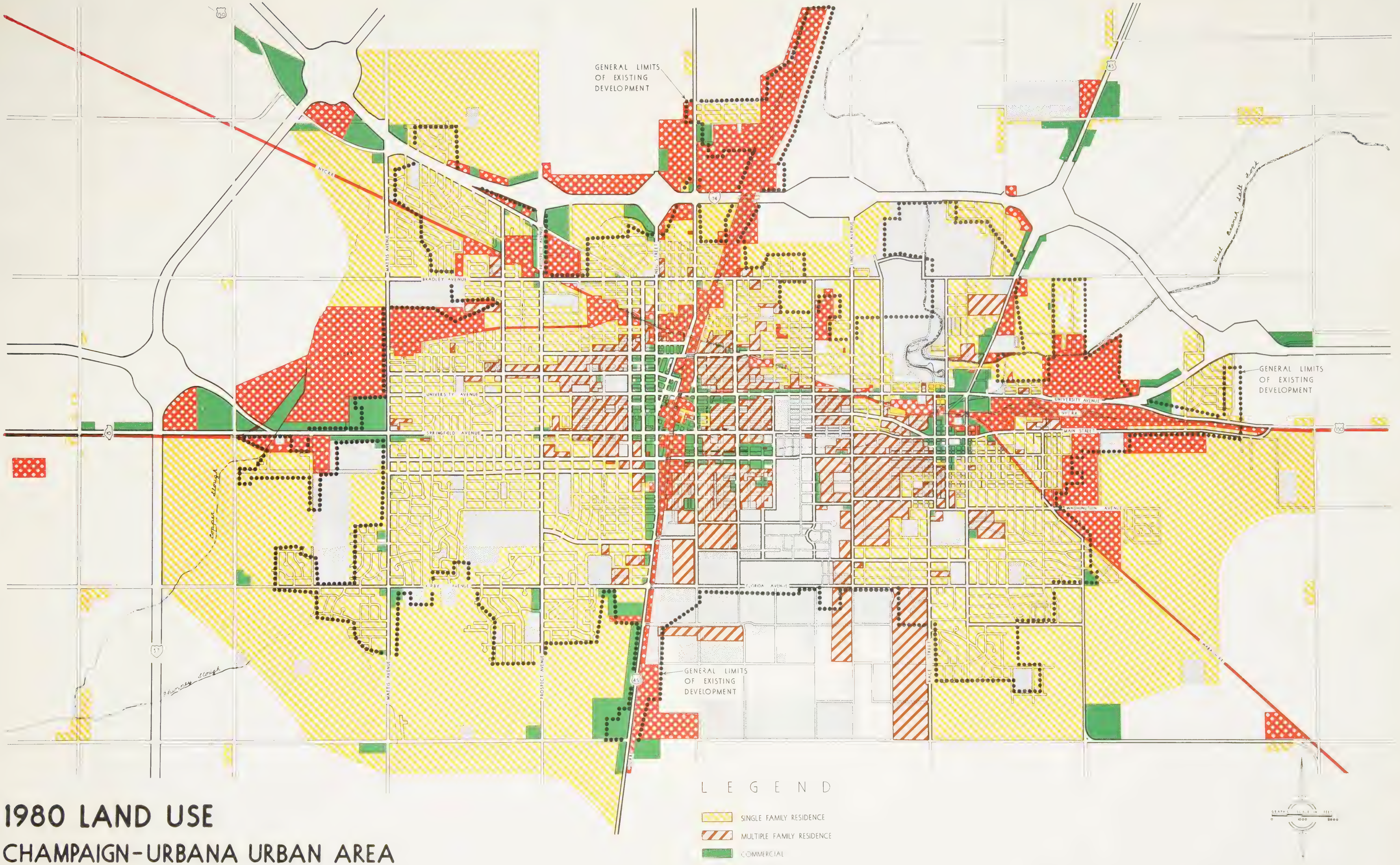
PLATE 22



1980 LAND USE

CHAMPAIGN-URBANA URBAN AREA

STATE OF ILLINOIS

LEGEND

- ▨ SINGLE FAMILY RESIDENCE
- ▨ MULTIPLE FAMILY RESIDENCE
- 🟩 COMMERCIAL
- 🟥 INDUSTRIAL AND RAILROAD
- ☐ PUBLIC AND SEMI PUBLIC

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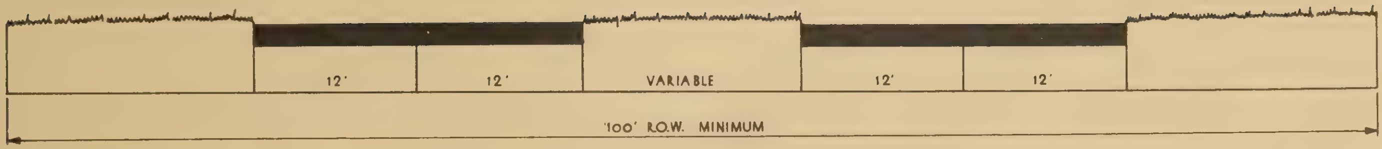
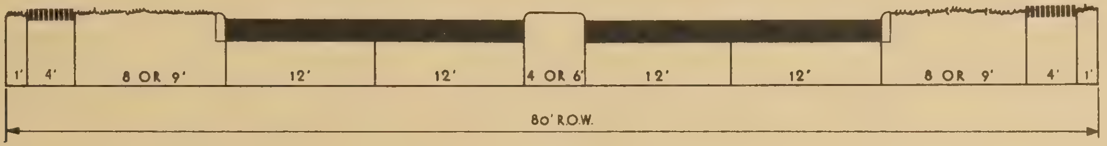
PLATE 23

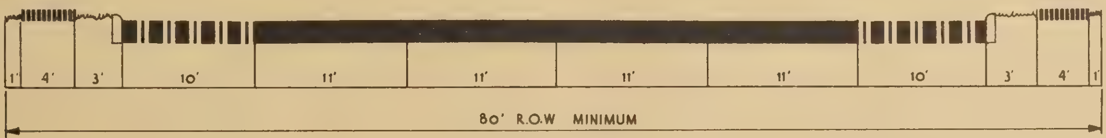
Ⓐ LIMITED ACCESS



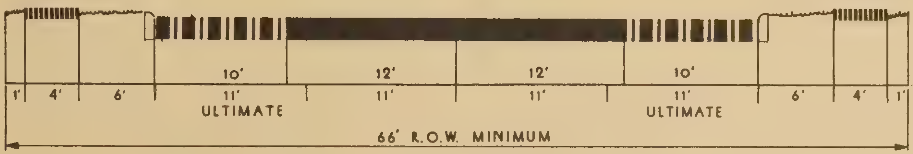
Ⓑ PRIMARY ARTERIAL - SUBURBAN



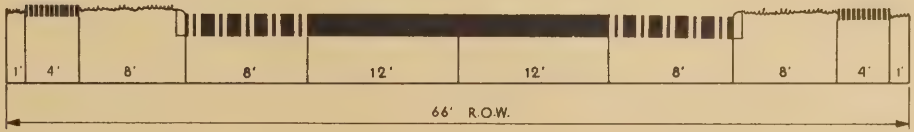
Ⓒ PRIMARY ARTERIAL - WITH PARKING



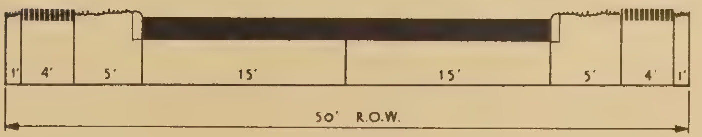
Ⓓ PRIMARY ARTERIAL
SECONDARY ARTERIAL



Ⓔ COLLECTOR STREETS



Ⓕ LOCAL STREETS



NOTE: A B AND C ARE STANDARD SECTIONS FOR USE ON STATE AND FEDERAL ROUTES. THE SIDEWALKS SHOWN ARE NOT A PART OF THE HIGHWAY IMPROVEMENT.

TYPICAL CROSS SECTIONS
CHAMPAIGN - URBANA URBAN AREA
STATE OF ILLINOIS

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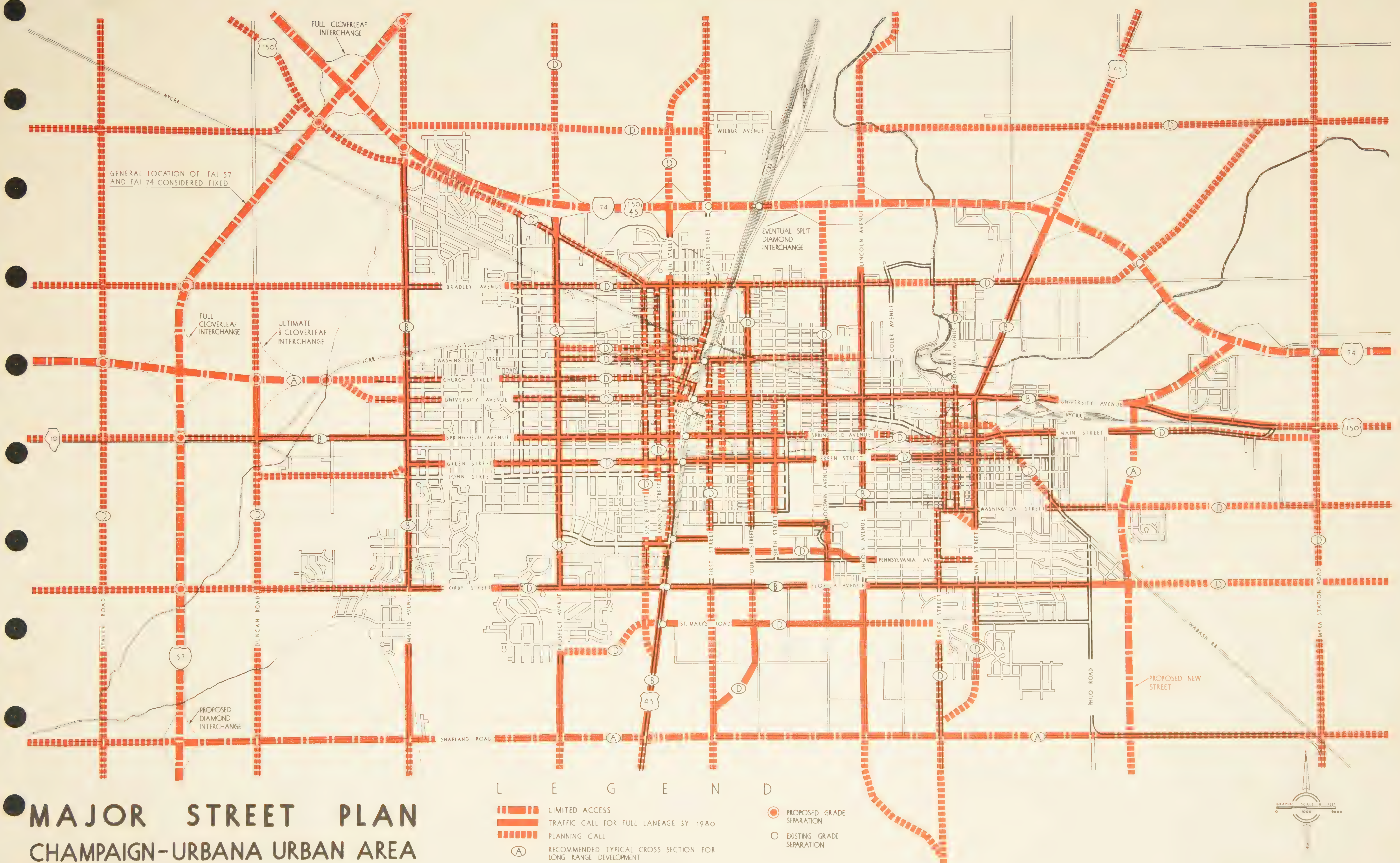
PLATE 24



MAJOR STREET PLAN
CHAMPAIGN-URBANA URBAN AREA
STATE OF ILLINOIS

HARLAND BARTHOLOMEW AND ASSOCIATES
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TABLE A-1

MAJOR STREET TABULATIONS

CHAMPAIGN-URBANA URBAN AREA

EAST-WEST STREETS

		EXISTING		PROPOSED[1]		COST ESTIMATES							
ITEM	STREET AND SECTION	ROW	PAVEMENT	ROW	PAVEMENT	SECTION REFERENCE[2]	LENGTH IN FEET	UNIT COST[3]	ROW COST	PAVEMENT COST[4]	TOTAL COST[5]	DHV[6]	REMARKS
1.	SHAPLAND ROAD-PHILO ROAD												Total cost includes new ICRR underpass and FAI 57 interchange
	a. FAI 57-Duncan	66	20	100	24	NC	7900	$ 22.00	$ 22,400	$ 17,000	$	--	
	b. Duncan-Mattis	66	20	100	24	NC	5200	22.00	S	114,000		--	
	c. Mattis-Neil	66	20	100	24-16-24	NC	8200	50.82	S	420,000		--	
	d. Neil-First	--	--	100	24-16-24	NC	2450	50.82	11,300	125,000		--	
	e. First-Race	--	--	100	24	NC	7850	22.00	S	173,000		--	
	f. Race-(New Street)	66	22	100	24	NC	6500	22.00	S	143,000		--	
	g. (New Street)-Myra Station	66	22	100	X	--	--	--	S	--	1,410,000	--	
2.	ST. MARY'S ROAD												Total cost includes ICRR underpass widening
	a. Prospect-State	--	--	80	44	NC	3100	50.74	S	157,000		--	
	b. State-Neil	--	--	80	44	NC	350	50.74	S	18,000		--	
	c. Neil-Fourth	66	20	80	44	3	3300	50.74	S	170,000		--	
	d. Fourth-Lincoln	--	--	80	44	NC	3900	50.74	S	190,000		--	
	e. Lincoln-Race	--	--	66	--	--	--	--	S	--	[illegible],000	--	
3.	KIRBY-FLORIDA AVENUE												
	a. Duncan-Mattis	66	22	80	44	3	7800	50.74	S	400,000		--	
	b. Mattis-Prospect	66	22	66	44	3	5200	50.74	--	260,000		--	
	c. Prospect-Neil	66	20	66	22-4-22	3A	3625	57.76	--	220,000		--	
	d. Neil-Fourth	66	47	80	X	--	--	--	S	--		--	
	e. Fourth-City Limits	66	23	80	22-16-22	3C	2300	56.34	S	129,000		--	
	f. City Limits-Lincoln	--	23	80	22-16-22	3C	1760	56.34	S	99,000		--	
	g. Lincoln-Vine	60	32	60	44	2	3900	16.98	--	66,000		--	
	h. Vine-Willey	60	24	60	44	3	3150	50.74	--	160,000		--	
	i. Willey-Philo	80	23	80	44	3	740	50.74	--	38,000		--	
	j. Philo-Wabash RR	--	--	80	44	NC	1800	50.74	S	92,000		--	
	k. Wabash RR-Myra Station	--	--	80	S	--	6000	--	S	--	1,950,000	--	
4.	HESSEL-PEABODY DRIVE												
	a. Prospect-Neil	80	40	80	X	--	--	--	--	--		--	
	b. Neil-First	66	40	66	X	--	--	--	--	--		--	
	c. First-Fourth	66	40	66	X	--	--	--	--	--		--	
	d. Fourth-Goodwin	--	24	66	44	3	2580	51.44	S	130,000		--	
	e. Goodwin-Pennsylvania	--	--	66	44	NC	225	50.74	S	11,000	188,000	--	
5.	PENNSYLVANIA												
	a. Virginia-Lincoln	50	20	66	44	3	450	51.44	S	23,000		--	
	b. Lincoln-Vine	80	31	80	X	--	--	--	--	--	33,000[L]	--	
6.	GREGORY DRIVE												
	a. First-Fourth	60	35	60	X	--	--	--	--	--		--	
	b. Fourth-Goodwin	60	32	66	44	3	2600	50.74	S	132,000	176,000	--	
7.	WASHINGTON STREET												
	a. Race-Vine	60	28	60	--	--	--	--	--	--		--	
	b. Vine-Philo	60	31	60	44	3	2950	50.74	--	150,000		--	
	c. Philo-Myra Station	--	--	80	44	NC	8875	50.74	S	450,000	800,000	--	
8.	JOHN STREET												
	a. Duncan-Kenwood	66	21	66	R	--	--	--	--	--		--	
	b. Kenwood-Mattis	66	--	66	44	3	2500	50.74	--	127,000		--	
	c. Mattis-Western	66	27	66	44	--	--	--	--	--		--	
	d. Western-Draper	66	27	66	X	--	--	--	--	--		--	
	e. Draper-Russell	95	27	95	X	--	--	---	--	--		--	
	f. Russell-Prospect	66	27	66	X	--	--	--	--	--		--	
	g. Prospect-Prairie	66	35	66	X	--	--	--	--	--		--	
	h. Prairie-Neil	50	35	50	X	--	--	--	--	--	169,000	--	
9.	GREEN STREET												
	a. John-Mattis	--	--	66	44	3	600	50.74	50,000	30,000		--	
	b. Mattis-Russell	66	27	66	44	3	2600	50.74	--	130,000		--	
	c. Russell-Prospect	66	27	66	44	3	2600	50.74	--	130,000		--	
	d. Prospect-New	66	28	66	44	3	1050	50.74	--	51,000		--	
	e. New-Prairie	66	32	66	44	2	1550	16.98	--	26,000		--	
	f. Prairie-State	66	38	66	44	2	450	16.98	--	8000		--	
	g. State-Neil	66	32	66	44	2	900	16.98	--	15,000		--	
	h. Neil-Wright	66	43	66	X	--	--	--	--	--		--	
	i. Wright-Mathews	--	32	85	24-16-24*	--	--	--	S	--		--	
	j. Mathews-Goodwin	78	31	78	24-16-24*	--	--	--	--	--		--	
	k. Goodwin-Lincoln	80	31	80	24-16-24*	--	--	--	--	--		--	
	l. Lincoln-Broadway	60	31	60	44	3	3250	50.74	--	167,000		--	
	m. Broadway-Vine	50	25	60	44	3	500	50.74	10,000	25,000		--	
	n. Vine-Water (Extended)	50	25	66	--	--	1200	--	29,000	--	870,000	--	
10.	SPRINGFIELD AVENUE												80' ROW from State to Neil for future left-turn lanes
	a. Staley-Duncan	56	19	80	24	4	5200	14.37	S	75,000		360	
	b. Duncan-Mattis	66	19	80	44	4	5200	35.46	S	180,000		790	
	c. Mattis-Russel	66	19	66	22-4-22	4	2600	39.90	--	104,000		940	
	d. Russell-Prospect	66	28	66	22-4-22	4	2600	32.82	--	85,000		940	
	e. Prospect-State	66	36	66	44	2	3050	16.98	--	52,000		850	
	f. State-Neil	66	36	80	44	2	900	16.98	18,900	16,000		760	
	g. Neil-Water	66	43	66	X	--	--	--	--	--		--	
	h. Water-Fourth	66	36	66	44	2	2025	16.98	--	35,000		760	
	i. Fourth-Wright	66	36	66	44	2	1225	16.98	--	21,000		--	
	j. Wright-Romine	--	36	66	44	--	540	16.98	S	9000		830	
	k. Romine-Lincoln	66	36	66	44	--	2150	16.98	--	37,000		--	
	l. Lincoln-McCullough	66	36	66	X	--	--	--	--	--		--	
	m. McCullough-Cedar	66	30	66	X	--	--	--	--	--	1,090,000	--	
11.	MAIN STREET												
	a. Lincoln-Coler	66	34	66	X	--	1050	--	--	--		--	
	b. Coler-Cedar	66	34	66	X	--	1050	--	--	--		--	
	c. Cedar-Vine	82	64	82	X	--	--	--	--	--		--	
	d. Vine-(County Hospital)	66	40	66	X	--	--	--	--	--		--	
	e. (Hospital)-Myra Station	66	18	66	R	--	--	--	--	--		--	
						SUB TOTAL			$141,600	$5,210,000	$ 7,550,000		

1. Proposed improvement by 1980.
2. Typical section improvement assumed as described in Cost Estimate Supplement.
3. Based upon typical section referenced with modifications for specific conditions.
4. Includes only cost for base, surfacing, shoulders or curbs, and existing surface removal where required.
5. Includes ROW, pavement, drainage, signalization, and utilities as indicated in Cost Estimate Supplement.
6. 1980 Design Hour Volumes for selected sections on marked routes.

R Resurfacing, not included in cost estimates
X No Change
S Acquire through subdivision regulations or University of Illinois
L Cost for left-turn lanes added
* Now programmed for construction, not included in cost estimates

TABLE A-2

MAJOR STREET TABULATIONS

CHAMPAIGN-URBANA URBAN AREA

EAST-WEST STREETS

ITEM	STREET AND SECTION	EXISTING		PROPOSED[1]		COST ESTIMATES							
		ROW	PAVEMENT	ROW	PAVEMENT	SECTION REFERENCE[2]	LENGTH IN FEET	UNIT COST[3]	ROW COST	PAVEMENT COST[4]	TOTAL COST[5]	DHV[6]	REMARKS
12.	WATER STREET												Total cost includes building demolition
	a. Race-Broadway	32	19	66	44	3	400	$ 50.74	$ 80,000	$ 20,000	$	--	
	b. Broadway-Vine	66	38	66	X	--	--	--	--	--		--	
	c. Vine-Washington	--	--	66	--	--	--	--	--	--	109,000	--	
13.	DECATUR SPUR												Total cost includes the ICRR overpass and the Duncan Road overpass.
	a. FAI 57-University	--	--	200	24-16-24	NC	5500	50.82	37,900	280,000	745,000	--	
14.	UNIVERSITY AVENUE												
	a. Church-Mattis	--	--	80	44	NC	1200	50.74	6600	61,000		--	
	b. Mattis-Sabin	82	36	82	X	--	--	--	--	--		--	
	c. Sabin-Prospect	82	36	82	X	--	--	--	--	--		--	
	d. Prospect-State	82	35	82	X	--	--	--	--	--		--	
	e. State-Neil	82	60	82	X	--	--	--	--	--		--	
	f. Neil-Walnut	64	50	64	X	--	--	--	--	--		--	
	g. Walnut-Market	64	47	64	X	--	--	--	--	--		--	
	h. Market-First	82	54	82	X	--	--	--	--	--		--	
	i. First-Third	80	53	80	X	--	--	--	--	--		--	
	j. Third-Fourth	80	58	80	X	--	--	--	--	--		--	
	k. Fourth-Wright	80	58	80	X	--	--	--	--	--		--	
	l. Wright-Romine	80	56	80	X	--	--	--	--	--		--	
	m. Romine-Goodwin	80	36	80	24-4-24	2A	850	24.00	--	20,000		1370	
	n. Goodwin-Lincoln	80	36	80	24-4-24	2A	1300	24.00	--	31,000			
	o. Lincoln-Race	66	37	66	22-4-22	2A	2825	24.00	--	70,000		--	
	p. Race-Vine	66	47	66	X	--	--	--	--	--		--	
	q. Vine-Spur 11	80	22	80	24-4-24	4	5200	40.56	--	210,000L		1200	
	r. Spur 11-Myra Station	66	22	66	44	4A	5300	53.01	--	175,000	820,000	720	
15.	CHURCH STREET												
	a. University-Mattis	--	--	80	44	NC	1200	50.74	36,600	61,000		--	
	b. Mattis-Elm	66	35	66	X	--	--	--	--	--		--	
	c. Elm-State	66	36	66	X	--	--	--	--	--		--	
	d. State-Neil	66	42	66	X	--	--	--	--	--		--	
	e. Neil-Chestnut	70	45	70	X	--	--	--	--	--	121,000	--	
16.	WASHINGTON												Total cost includes ICRR underpass widening and intersection improvements at Neil and at First
	a. Prospect-Harris	60	27	60	X	--	--	--	--	--		--	
	b. Harris-Lyhn	80	27	80	X	--	--	--	--	--		--	
	c. Lyhn-State	80	28	80	X	--	--	--	--	--		--	
	d. State-Randolph	80	40	80	X	--	--	--	--	--		--	
	e. Randolph-Neil	80	50	80	X	--	--	--	30,000	2000		--	
	f. Neil-Hickory	70	46	70	X	--	--	--	--	--		--	
	g. Hickory-Market	70	43	70	X	--	--	--	--	--		--	
	h. Market-Oak & First	70	31	70	44	3	450	50.74	10,000	23,000		--	
	i. Oak & First-Fourth	57	27	57	44	3	1350	50.74	--	68,000		--	
	j. Fourth-Wright	66	27	66	X	--	--	--	--	--		--	
	k. Wright-Goodwin	66	25	66	X	--	--	--	--	--		--	
	l. Goodwin-Lincoln	66	20	66	R	--	--	--	--	--	360,000	--	
17.	COLUMBIA AVENUE												
	a. Prospect-Randolph	80	28	80	X	--	--	--	--	--		--	
	b. Randolph-Neil	70	28	70	X	--	--	--	--	--		--	
	c. Neil-Market	70	28	70	X	--	--	--	--	--		--	
18.	BRADLEY AVENUE												
	a. Staley-Duncan	66	20	80	X	--	--	--	S	--		--	
	b. Duncan-Mattis	60	20	80	R	--	--	--	S	--		--	
	c. Mattis-Redwood	66	20	66	R	--	--	--	--	--		--	
	d. Redwood-McKinley	66	27	66	R	--	--	--	--	--		--	
	e. McKinley-Prospect	66	40	66	X	--	--	--	--	--		--	
	f. Prospect-NYCRR	66	24	66	44	3	500	50.74	--	25,000			
	g. NYCRR-Harris	66	32	66	44	4	800	36.76	--	29,000		--	
	h. Harris-Market	66	27	66	44	3	3950	50.74	--	200,000		--	
	i. Market-Fifth	50	27	66	44	3	1825	50.74	50,150	92,000		--	
	j. Fifth-Carver	50	27	60	44	3	1050	50.74	7900	53,000		--	
	k. Carver-Lincoln	50	22	80	44	3	2600	50.74	S	130,000		--	
	l. Lincoln-Coler	60	22	80	44	3	1000	50.74	S	51,000		--	
	m. Coler-(Bridge)	60	21	80	44	3	1500	50.74	5500	76,000		--	
	n. (Bridge)-Broadway	60	18	60	44	3	750	50.74	--	38,000		--	
	o. Broadway-Willow	60	20	60	R	--	--	--	--	--		--	
	p. Willow-U.S. 45	63	21	63	R	--	--	--	--	--	990,000	--	
19.	BLOOMINGTON ROAD												
	a. FAI 57-Mattis	--	--	80	24	NC	3200	22.00	11,750	70,000		275	
	b. Mattis-Julie	80	23	80	44	3C	3350	50.74	--	170,000		325	
	c. Julie-Prospect	80	23	80	44	3C	2600	50.74	--	130,000		--	
	d. Prospect-Bradley	60	18	60	R	--	3550	--	--	--	510,000	--	
20.	WILBUR AVENUE												
	a. Mattis-Market	--	--	80	S	--	--	--	S	--		--	
	b. Market-ICRR	66	20	80	R	--	--	--	S	--		--	
						SUB TOTAL			$276,400	$ 2,085,000	$ 3,655,000		

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1. Proposed improvement by 1980.
2. Typical section improvement assumed as described in Cost Estimate Supplement.
3. Based upon typical section referenced with modifications for specific conditions.
4. Includes only cost for base, surfacing, shoulders or curbs, and existing surface removal where required.
5. Includes ROW, pavement, drainage, signalization, and utilities as indicated in Cost Estimate Supplement.
6. 1980 Design Hour Volumes for selected sections on marked routes.

R Resurfacing, not included in cost estimates
X No Change
S Acquire through subdivision regulations or University of Illinois
L Cost for left-turn lanes added
* Now programmed for construction, not included in cost estimates

TABLE A-3

MAJOR STREET TABULATIONS

CHAMPAIGN-URBANA URBAN AREA

NORTH-SOUTH STREETS

ITEM	STREET AND SECTION	EXISTING		PROPOSED[1]		COST ESTIMATES							
		ROW	PAVEMENT	ROW	PAVEMENT	SECTION REFERENCE[2]	LENGTH IN FEET	UNIT COST[3]	ROW COST	PAVEMENT COST[4]	TOTAL COST[5]	DHV[6]	REMARKS
1.	STALEY ROAD	66	18	80	X	--	--	$ --	$ S	$ --	$	--	
2.	DUNCAN ROAD												
	a. Shapland-Kirby	66	20	80	R	--	5200	--	S	--		--	
	b. Kirby-Decatur Spur	66	20	80	44	3	7500	50.74	S	390,000		--	
	c. Decatur Spur-Bradley	66	20	80	R	--	2700	--	S	--	520,000	--	
3.	MATTIS AVENUE												
	a. Shapland-Kirby	66	21	80	22-4-22	3A	5200	56.46	S	290,000		--	
	b. Kirby-Sangamon	80	21	80	22-4-22	3A	1450	56.46	--	82,000		--	
	c. Sangamon-Sunset Sub.	73	21	80	22-4-22	3A	1500	56.46	S	85,000		--	
	d. Sunset Sub.-Green	66	21	80	22-4-22	3A	1350	56.46	S	76,000		--	
	e. Green-Springfield	66	21	80	22-4-22	3A	900	56.46	5400	51,000		--	
	f. Springfield-University	66	32	80	24-16-24	3A	1300	59.56	33,800	77,000		1320	
	g. University-Church	66	22	80	24-16-24	3A	700	59.56	7000	42,000		1320	
	h. Church-Williamsburg	66	22	80	22-4-22	3A	4550	56.46	S	260,000		1030	
	i. Williamsburg-U.S. 150	66	21	80	22-4-22	3A	3200	56.46	S	180,000		--	
	j. U.S. 150 - (North)	66	22	80	X	--	--	--	S	--	1,600,000[L]	--	
4.	MC KINLEY AVENUE												
	a. John-Springfield	66	27	66	X	--	--	--	--	--		--	
	b. Springfield-University	66	36	66	X	--	--	--	--	--		--	
	c. University-Washington	66	28	66	X	--	--	--	--	--		--	
	d. Washington-Maple	66	27	66	X	--	--	--	--	--		--	
	e. Maple-Bradley	66	40	66	X	--	--	--	--	--		--	
	f. Bradley-Bloomington	66	22	66	X	--	--	--	--	--		--	
5.	PROSPECT AVENUE												
	a. Shapland-Broadmoor	66	22	80	44	3	3225	50.74	S	170,000		--	
	b. Broadmoor-Kirby	66	22	66	44	3	1950	50.74	--	100,000		--	
	c. Kirby-Fairway	66	22	66	44	3	1525	50.74	--	78,000		--	
	d. Fairway-Hessel	66	31	66	44	3	375	50.74	--	20,000		--	
	e. Hessel-John	66	27	66	44	3	2000	50.74	--	103,000		--	
	f. John-Springfield	66	40	66	X	--	--	--	--	--		--	
	g. Springfield-Bradley	66	40	66	22-4-22	1	5200	23.97	--	125,000		970	
	h. Bradley-Bloomington	66	40	66	44	1	1320	14.21	--	17,000		860	
	i. FAI 74-Wilbur	66	20	80	44	--	1400	50.74	S	71,000		--	
	j. Wilbur - (North)	66	20	80	X	--	--	--	S	--	1,040,000[L]	--	
6.	STATE STREET												
	a. Neil-St. Mary's	--	--	66	44	NC	550	50.74	27,900	28,000		--	
	b. St. Mary's-Kirby	--	--	66	44	NC	1300	50.74	66,000	66,000		--	
	c. Kirby-Hessel	66	20	66	44	3	1500	50.74	--	77,000		--	
	d. Hessel-Charles	66	39	66	X	--	1300	--	--	--		--	
	e. Charles-Springfield	66	28	66	44	3	2425	50.74	--	123,000		--	
	f. Springfield-University	66	40	66	X	--	--	--	--	--		--	
	g. University-Washington	66	39	66	X	--	--	--	--	--		--	
	h. Washington-Bradley	66	26	66	44	3	2500	50.74	--	129,000	730,000	--	
7.	RANDOLPH STREET												
	a. Neil-Hessel	--	--	66	44	NC	300	50.74	70,000	15,000		--	
	b. Hessel-Stanage	66	20	66	44	3	1300	50.74	--	67,000		--	
	c. Stanage-Charles	66	22	66	44	3	350	50.74	--	18,000		--	
	d. Charles-Springfield	66	28	66	44	3	2075	50.74	--	107,000		--	
	e. Springfield-White	66	28	66	44*	3	625	--	--	--		--	
	f. White-Clark	66	37	66	44*	2	375	--	--	--		--	
	g. Clark-Washington	66	44	66	X	--	--	--	--	--		--	
	h. Washington-Maple	66	32	66	44	3	1200	50.74	--	62,000		--	
	i. Maple-Beardsley	66	28	66	44	3	1050	50.74	--	54,000		--	
	j. Beardsley-Bradley	66	40	66	X	--	--	--	--	--	510,000	--	
8.	NEIL STREET												
	a. To Shapland	66	22	66	X	--	--	--	--	--		--	
	b. Shapland-State	66	22	66	24-4-24	4	3400	39.26	--	133,000		930	
	c. State-St. Mary's	66	22	66	44	4	550	35.46	--	20,000		930	
	d. St. Mary's Armory	66	42	66	X	--	--	--	--	--		--	
	e. Armory-John	66	42	66	X	--	--	--	--	--		--	
	f. John-Green	66	39	66	X	--	--	--	--	--		--	
	g. Green-Springfield	66	48	66	X	--	--	--	--	--		--	
	h. Springfield-Bailey	66	41	66	X	--	--	--	--	--		--	
	i. Bailey-Hill	66	43	66	X	--	--	--	--	--		--	
	j. Hill-Washington	66	44	66	X	--	--	--	--	--		--	
	k. Washington-Maple	66	45	66	X	--	--	--	--	--		--	
	l. Maple-Tremont	66	35	66	22-4-22*	--	175	--	--	--		--	
	m. Tremont-FAI 74	66	27	66	22-4-22*	--	2900	--	--	--		--	
	n. FAI 74-Market	--	--	80	44	NC	5000	50.74	18,400	250,000	630,000	--	
9.	WALNUT STREET												
	a. Neil-Main	66	46	66	X	--	--	--	--	--		--	
	b. Main-Washington	66	47	66	X	--	--	--	--	--		--	
	c. Washington-Columbia	66	28	66	X	--	--	--	--	--		--	
10.	MARKET STREET												
	a. Washington-Bradley	66	40	66	X	--	--	--	--	--		--	
	b. Bradley-FAI 75	66	28	66	X	--	--	--	--	--		--	
	c. FAI 74-Neil	66	20	66	X	--	--	--	--	--		--	
11.	FIRST STREET												
	a. Shapland-Fourth	66	22	66	44	3	500	49.44	--	25,000		--	
	b. Fourth-St. Mary's	66	22	66	R	--	--	--	--	--		--	
	c. St. Mary's-Florida	66	22	66	44	3	1200	49.44	--	59,000		--	
	d. Florida-Armory	66	35	66	X	--	--	--	--	--		--	
	e. Armory-Clark	66	40	66	X	--	--	--	--	--		--	
	f. Clark-Park	66	42	66	X	--	--	--	--	--		--	
	g. Park-Hill	66	39	66	X	--	--	--	--	--		--	
	h. Hill-Washington	66	38	66	X	--	--	--	--	--	112,000	--	
12.	SECOND STREET												
	a. Green-Healy	66	28	66	44	3	440	50.74	--	22,000		--	
	b. Healy-Clark	66	--	66	44	NC	950	50.74	--	48,000		--	
	c. Clark-University	66	41	66	X	--	--	--	--	--		--	
	d. University-Park	66	46	66	X	--	--	--	--	--		--	
	e. Park-Washington	66	27	66	X	--	--	--	--	--	93,000	--	
13.	FOURTH STREET												
	a. First-St. Mary's	--	--	80	44	NC	3900	50.74	S	200,000		--	
	b. St. Mary's-Florida	80	21	80	44	3	1300	49.44	--	64,000		--	
	c. Florida-Armory	80	35	80	44	2	2625	16.98	--	44,000		--	
	d. Armory-John	80	28	80	44	3	1300	50.74	--	66,000		--	
	e. John-Green	81	27	81	44	3	450	50.74	--	23,000		--	
	f. Green-Springfield	80	27	80	44	3	850	50.74	--	43,000		--	
	g. Springfield-Stoughton	62	42	66	22-4-22	2A	250	18.29	1000	4600		910	
	h. Stoughton-University	62	40	66	22-4-22	2A	1025	20.19	4000	21,000		910	
	i. University-Tremont	66	40	66	X	--	--	--	--	--		--	
	j. Tremont-Bradley	56	40	56	X	--	--	--	--	--	640,000	--	
						SUB TOTAL			$233,000	$3,985,600	$5,875,000		

1. Proposed improvement by 1980.
2. Typical section improvement assumed as described in Cost Estimate Supplement.
3. Based upon typical section referenced with modifications for specific conditions.
4. Includes only cost for base, surfacing, shoulders or curbs, and existing surface removal where required.
5. Includes ROW, pavement, drainage, signalization, and utilities as indicated in Cost Estimate Supplement.
6. 1980 Design Hour Volumes for selected sections on marked routes.

R Resurfacing, not included in cost estimates
X No Change
S Acquire through subdivision regulations or University of Illinois.
L Cost for left-turn lanes added
* Now programmed for construction, not included in cost estimates

TABLE A-4

MAJOR STREET TABULATIONS

CHAMPAIGN-URBANA URBAN AREA

NORTH-SOUTH STREETS

		EXISTING		PROPOSED[1]				COST ESTIMATES					
ITEM	STREET AND SECTION	ROW	PAVEMENT	ROW	PAVEMENT	SECTION REFERENCE[2]	LENGTH IN FEET	UNIT COST[3]	ROW COST	PAVEMENT COST[4]	TOTAL COST[5]	DHV[6]	REMARKS
14.	SIXTH STREET												
	a. Pennsylvania-Gregory	66	26	66	44	3	1250	$ 50.74	$ --	$ 64,000	$	--	
	b. Gregory-Springfield	66	35	66	44	3	3075	50.74	--	155,000		--	
	c. Springfield-University	66	35	66	X	--	--	--	--	--	290,000	--	
15.	GOODWIN AVENUE												
	a. St. Mary's-Pennsylvania	--	--	66	44	NC	2200	50.74	S	111,000		--	
	b. Pennsylvania-Nevada	60	35	66	44	NC	1900	50.74	S	96,000		--	
	c. Nevada-Springfield	66	54	66	X	--	--	--	--	--		--	
	d. Springfield-University	66	27	66	X	--	--	--	--	3400^{L}		--	
	e. University-Park	66	40	66	X	--	--	--	--	--		--	
	f. Park-NYCRR	66	21	66	44	3	375	50.74	--	19,000		--	
	g. NYCRR-Washington	66	21	66	44	3	850	50.74	--	43,000		--	
	h. Washington-Eads	66	25	66	R	--	--	--	--	--		--	
	i. Eads-Bradley	60	25	60	R	--	--	--	--	--		--	
	j. Bradley-FAI 74	66	--	66	X	--	--	--	--	--	360,000	--	
16.	LINCOLN AVENUE.												
	a. Race-Shapland	--	--	80	--	--	--	--	S	--		--	
	b. Shapland-Florida	--	--	80	22-4-22	NC	5200	54.54	S	280,000		--	
	c. Florida-Indiana	60	40	66	X	--	1650	--	12,500	--		--	
	d. Indiana-Nevada	60	40	66	X	--	1300	--	10,000	--		--	
	e. Nevada-Oregon	66	36	66	22-4-22	2A	350	24.00	--	8400		--	
	f. Oregon-California	66	32	66	22-4-22	2A	300	24.00	--	7200		--	
	g. California-Illinois	66	27	66	22-4-22	3C	300	58.26	--	18,000		--	
	h. Illinois-Green	60	27	66	22-4-22	3C	550	58.26	6600	32,000		--	
	i. Green-Western	66	25	66	22-4-22	3C	600	58.26	--	35,000		--	
	j. Western-University	66	25	66	22-4-22	3C	1475	58.26	--	86,000		--	
	k. University-Fairview	66	23	66	44*	--	--	--	--	--		--	
	l. Fairview-FAI 74	66	22	66	44*	--	--	--	--	--	650,000	--	
17.	RACE STREET												
	a. Shapland-Huff	66	21	80	44	NC	2575	50.74	S	131,000		--	
	b. Huff-Florida	66	31	66	X	--	--	--	--	--		--	
	c. Florida-Michigan	60	31	60	X	--	--	--	--	--		--	
	d. Michigan-Iowa	60	29	60	X	--	--	--	--	--		--	
	e. Iowa-Washington	60	25	60	X	--	--	--	--	--		--	
	f. Washington-Oregon	50	28	50	X	--	--	--	--	1100^{L}		--	
	g. Oregon-Main	50	30	50	X	--	--	--	--	--		--	
	h. Main-NYCRR	52	35	52	X	--	--	--	--	--		--	
	i. NYCRR-University	52	25	52	X	--	--	--	--	--	176,000	--	
18.	BROADWAY AVENUE												
	a. Vine-Washington	--	--	80	44	NC	900	50.74	35,000	46,000		--	
	b. Washington-Green	82	39	82	--	--	--	--	--	--		--	
	c. Green-Main	82	56	82	X	--	--	--	--	--		--	
	d. Main-NYCRR	82	58	82	X	--	--	--	--	--		--	
	e. NYCRR-Park	82	33	82	44	3	900	50.74	--	46,000		--	
	f. Park-Franklin	82	27	82	44	3	1275	50.74	--	65,000		--	
	g. Franklin-Bradley	66	18	66	44	3	2375	50.74	--	120,000	400,000	--	
19.	VINE STREET												
	a. Race-Huff	--	--	80	44	NC	900	50.74	S	46,000		--	
	b. Huff-Colorado	66	19	66	44	3	1250	50.74	--	63,000		--	
	c. Colorado-Florida	66	19	66	44	3	1300	50.74	--	66,000		--	
	d. Florida-Michigan	66	36	66	44	2	1275	16.98	--	22,000		--	
	e. Michigan-Washington	66	44	66	X	--	--	--	--	--		--	
	f. Washington-Oregon	54	36	66	44	2	975	16.98	11,700	17,000		--	
	g. Oregon-Green	66	36	66	44	2	1150	16.98	--	20,000		--	
	h. Green-Main	66	36	66	44	2	600	16.98	--	10,000		--	
	i. Main-University	66	41	66	X	--	--	--	--	--		--	
	j. University-Bradley	80	40	80	24-4-24	1	4275	23.97	--	100,000		935	
	k. Bradley-FAI 74	120	40	120	24-4-24	1	1000	23.97	--	24,000	530,000	935	
20.	NEW STREET												
	a. Shapland-Florida	--	--	100	24-16-24	NC	5200	22.00	S	114,000		--	
	b. Florida-Washington	--	--	100	24-16-24	NC	2600	50.82	S	132,000		--	
	c. Washington-Main	--	--	100	24-16-24	NC	2600	50.82	County	132,000		--	
	d. Main-University	--	--	100	24-16-24	NC	1000	50.82	29,000	51,000	570,000	--	
21.	MYRA STATION ROAD												
	a. Shapland-Florida	66	20	80	R	--	--	--	S	--		--	
	b. Florida-Washington	66	20	80	R	--	--	--	S	--		--	
	c. Washington-University	66	20	80	R	--	--	--	S	--		--	
						SUB TOTAL			$104,800	$ 2,182,100	$ 2,976,000		
						TOTAL			$756,300	$13,462,000	$20,056,000		

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1. Proposed improvement by 1980.
2. Typical section improvement assumed as described in Cost Estimate Supplement.
3. Based upon typical section referenced with modifications for specific conditions.
4. Includes only cost for base, surfacing, shoulders or curbs, and existing surface removal where required.
5. Includes ROW, pavement, drainage, signalization, and utilities as indicated in Cost Estimate Supplement.
6. 1980 Design Hour Volumes for selected sections on marked routes.

R Resurfacing, not included in cost estimates
X No change
S Acquire through subdivision regulations or University of Illinois.
L Cost for left-turn lanes added
* Now programmed for construction, not included in cost estimates

TABLE B

1980 POPULATION DISTRIBUTION

CHAMPAIGN-URBANA URBAN AREA

	NIGHT POPULATION			DAYTIME POPULATION						
ZONE NUMBER	NON STUDENT	STUDENT	TOTAL	MANUFACTURING & RELATED INDUSTRIES	SCHOOLS	UNIVERSITY	HOMES	MISC.	TOTAL	ZONE NUMBER
101	--	--	--	3150	--	--	--	--	3150	101
102	--	--	--	3500	--	--	--	--	3500	102
111	20	--	20	1100	--	--	7	--	1107	111
121	2035	220	2255	75	2050	88	733	--	2946	121
122	2840	200	3040	120	--	80	1030	--	1230	122
123	420	130	550	150	--	52	156	--	358	123
124	2705	45	2750	25	--	17	977	--	1019	124
125	2775	140	2915	60	--	56	1000	--	1116	125
126	3000	30	3030	40	1600	12	1095	--	2747	126
127	5260	40	5300	100	500	16	1910	--	2526	127
128	2180	30	2210	15	2000	12	800	--	2827	128
129	7180	20	7200	800	1915	8	2600	--	5323	129
131	1740	160	1900	25	355	64	680	105	1229	131
132	2005	265	2270	60	1100	106	723	--	1989	132
133	2755	120	2875	75	530	48	1010	--	1663	133
134	2060	70	2130	180	900	28	740	--	1848	134
135	1113	10	1123	300	--	4	400	--	704	135
136	2655	30	2685	100	--	12	977	--	1089	136
137	1035	15	1050	1600	--	60	361	--	2021	137
141	100	--	100	750	--	--	36	--	786	141
142	1750	--	1750	40	--	--	635	--	675	142
143	2350	80	2430	1000	550	32	850	--	2432	143
144	1713	80	1793	750	550	32	625	--	1957	144
145	870	80	950	900	--	32	314	--	1246	145
146	458	--	458	900	--	--	166	--	1066	146
147	3585	15	3600	800	550	60	1300	--	2710	147
151	--	--	--	2500	--	--	--	--	2500	151
152	510	6150	6660	75	--	2460	149	35	2719	152
153	20	400	420	550	--	160	7	--	717	153
154	875	1440	2315	750	750	576	317	300	2693	154
155	1233	130	1363	800	200	52	435	195	1682	155
156	2720	40	2760	750	--	16	986	--	1752	156
157	16	--	16	400	--	--	6	--	406	157
201	--	1000	1000	--	--	6400	--	--	6400	201
202	--	--	--	--	--	10,200	--	--	10,200	202
203	--	8350	8350	--	--	5240	--	--	5240	203
204	--	--	--	--	--	10,000	--	--	10,000	204
205	--	5000	5000	25	--	2000	--	250	2275	205
206	3000	8020	11,020	--	--	12,270	2440	--	14,710	206
301	896	180	1076	1500	--	72	324	--	1896	301
311	2900	2100	5000	150	550	840	1040	--	2580	311
312	530	3600	4130	60	--	1440	190	--	1690	312
313	2430	1190	3620	20	1900	476	880	--	3276	313
321	3140	200	3340	60	400	80	1130	--	1670	321
322	2940	200	3140	50	550	80	1060	--	1740	322
323	2130	30	2160	1200	500	12	765	300	2777	323
324	2640	60	2700	25	550	24	955	--	1554	324
325	2360	10	2370	350	550	4	850	--	1754	325
331	--	--	--	520	--	--	--	--	520	331
332	175	--	175	20	--	--	63	--	83	332
333	2710	--	2710	175	2000	--	975	--	3150	333
341	290	40	330	1150	--	16	105	--	1271	341
342	1645	130	1775	500	350	52	595	--	1497	342
343	186	10	196	250	--	4	65	--	319	343
344	650	--	650	250	--	--	234	--	484	344
345	36	--	36	--	--	--	13	--	13	345
351	927	60	987	550	--	24	336	170	1080	351
352	1850	50	1900	80	--	20	669	--	769	352
353	4780	--	4780	50	400	--	1730	--	2180	353
361	800	4850	5650	125	1100	2180	293	--	3698	361
TOTALS	94,993	45,020	140,013	29,550	22,400	55,517	35,737	1,355	144,559	

1959 POPULATION DISTRIBUTION

CHAMPAIGN-URBANA URBAN AREA

	NIGHT POPULATION			DAYTIME POPULATION							
ZONE NUMBER	NON STUDENT	STUDENT	TOTAL	RELATED INDUSTRIES	MANUFACTURING	SCHOOLS	UNIVERSITY	HOMES	MISC.	TOTAL	ZONE NUMBER
101	260	--	260	2610	200	--	--	160	--	2970	101
102	26	--	26	3115	200	--	--	--	--	3315	102
111	16	10	26	1055	--	--	4	--	--	1059	111
121	1920	200	2120	10	--	1965	80	720	--	2775	121
122	2690	150	2840	65	--	--	60	960	--	1085	122
123	125	95	220	85	--	--	4	120	--	209	123
124	2525	45	2570	25	--	--	18	910	--	953	124
125	2680	125	2805	55	--	--	50	872	--	977	125
126	1460	10	1470	15	--	1035	4	390	--	1444	126
127	51	--	51	15	--	--	--	--	--	15	127
128	1450	30	1480	15	--	--	12	420	--	447	128
129	95	--	95	--	350	--	--	20	--	370	129
131	1750	150	1900	15	--	355	60	700	105	1235	131
132	1900	250	2150	20	--	1060	100	760	--	1940	132
133	2605	150	2755	--	--	530	60	1010	--	1600	133
134	1825	75	1900	--	90	880	30	670	--	1670	134
135	547	--	547	--	235	--	--	160	--	395	135
136	2505	35	2540	--	100	--	12	910	--	1022	136
137	30	--	30	310	--	--	--	9	--	319	137
141	415	--	415	210	480	--	--	120	--	810	141
142	1520	--	1520	15	--	--	--	490	--	505	142
143	1920	75	1995	420	--	530	30	610	--	1590	143
144	1555	75	1630	360	--	530	30	520	--	1440	144
145	630	75	705	310	500	--	30	210	--	1050	145
146	416	--	416	10	280	--	--	110	--	400	146
147	31	--	31	--	--	--	--	9	--	9	147
151	26	--	26	2110	200	--	--	8	--	2318	151
152	980	4540	5520	50	--	--	1900	470	--	2420	152
153	20	550	570	510	--	--	270	--	--	780	153
154	1370	1025	2395	500	--	710	500	590	300	2600	154
155	1300	125	1425	760	--	180	50	440	190	1620	155
156	2420	50	2470	500	--	--	20	750	--	1270	156
157	15	--	15	--	375	--	--	4	--	379	157
201	--	50	50	--	--	--	5770	--	--	5770	201
202	--	750	750	10	--	--	6870	--	--	6880	202
203	1290	2970	4260	--	--	--	1700	520	--	2220	203
204	--	--	--	--	--	--	4725	--	--	4725	204
205	595	2830	3425	25	--	--	1300	270	250	1845	205
206	10	--	10	--	--	45	150	--	--	195	206
301	875	160	1035	1105	--	--	64	360	--	1529	301
311	2830	1010	3840	125	--	550	1200	1080	--	2955	311
312	620	2210	2830	40	--	--	884	260	--	1184	312
313	2340	850	3190	20	--	1850	400	940	--	3210	313
321	3230	240	3470	25	--	385	96	1170	--	1676	321
322	2750	240	2990	30	--	530	96	960	--	1616	322
323	78	--	78	110	380	--	--	9	--	499	323
324	1670	50	1720	--	--	410	20	580	--	1010	324
325	15	--	15	--	--	--	--	4	--	4	325
331	21	--	21	500	--	--	--	4	--	504	331
332	83	--	83	20	--	--	--	20	--	40	332
333	290	--	290	40	--	20	--	110	--	170	333
341	182	--	182	1105	--	--	--	70	--	1175	341
342	920	120	1040	400	--	155	48	300	--	903	342
343	89	--	89	50	--	--	--	20	--	70	343
344	260	--	260	75	--	--	--	70	--	145	344
345	21	--	21	--	--	--	--	1	--	1	345
351	890	50	940	530	30	--	20	330	170	1080	351
352	729	30	759	25	--	--	12	280	--	317	352
353	1770	--	1770	--	--	155	--	660	--	815	353
361	1370	600	1970	100	--	1090	240	510	--	1940	361
TOTALS	59,116	20,000	80,006	17,500	3,420	12,965	26,919	21,650	1,015	83,469	

TABLE C

1980 TOTAL TRIPS SUMMARY

ZONE	PROJECTION FACTOR				TOTAL TRIPS **	LOCAL	INTERNAL	INTRAZONE
	Population	Registrations	Use	Total				
101				1.25*	39,800	4,690	35,110	1,790
102				1.30*	9,700	1,380	8,320	127
111				1.30*	14,100	940	13,160	255
121	1.06	1.23	1.11	1.45	12,500	615	11,885	545
122	1.07	1.21	1.09	1.41	16,000	1,060	14,940	880
123	3.0	1.15	1.20	4.1 *	8,860	713	8,147	28
124	1.04	1.20	1.10	1.37	12,400	470	11,930	1,120
125	1.12	1.21	1.05	1.43	11,300	540	10,760	1,221
126	2.51	1.21	1.20	3.64*	13,300	637	12,663	1,100
127				88.5 *	26,200	1,770	24,430	2,410
128	1.65	1.23	1.90	3.86	12,500	720	11,780	1,200
129				36.5 *	41,600	2,570	39,030	4,250
131	1.00	1.22	1.06	1.30	7,500	520	6,980	208
132	1.06	1.23	1.19	1.55	21,800	1,340	20,460	868
133	1.06	1.21	1.05	1.35	12,700	800	11,900	744
134	1.12	1.23	1.25	1.72	12,300	760	11,540	1,040
135	2.05	1.23	1.25	3.15	4,650	750	3,900	60
136	1.06	1.22	1.07	1.38	11,200	760	10,440	1,160
137				186.5 *	38,400	3,300	35,100	1,570
141				1.40*	8,350	945	7,405	148
142	1.15	1.23	1.10	1.55	5,220	375	4,845	318
143	1.23	1.23	1.25	1.88	9,910	730	9,180	304
144	1.10	1.23	1.20	1.56	7,500	690	6,810	413
145	1.48	1.25	1.48	2.75	8,280	1,200	7,080	220
146				4.33*	4,500	955	3,545	360
147				102. *	19,200	2,300	16,900	1,600
151				1.30*	8,750	650	8,100	282
152	1.21	1.21	1.10	1.61	22,000	1,225	20,775	1,035
153				1.33*	9,370	570	8,800	78
154	0.97	1.20	1.20	1.39	13,900	1,210	12,690	495
155	0.96	1.24	1.25	1.50	11,900	1,090	10,810	465
156	1.10	1.24	1.12	1.53	6,640	730	5,910	817
157	1.04	1.24	1.08	1.39*	540	100	440	-
201				1.25*	16,600	595	16,005	362
202				1.25*	18,300	790	17,510	415
203	1.96	0.60	1.05	1.24	13,300	645	12,655	400
204				1.25*	22,800	815	21,985	424
205	1.47	1.10	1.05	1.70	8,440	250	8,190	306
206				49.6 *	50,800	1,265	49,535	2,845
301	1.04	1.22	1.10	1.40	25,900	1,650	24,250	1,110
311	1.30	1.22	1.20	1.92	24,300	1,010	23,290	1,510
312	1.46	1.15	1.15	1.93	13,300	515	12,785	278
313	1.14	1.23	1.07	1.50	16,100	500	15,600	1,509
321	0.96	1.25	1.17	1.41	12,400	755	11,645	1,000
322	1.05	1.22	1.06	1.36	11,600	465	11,135	1,430
323				12.8 *	14,900	1,520	13,380	860
324				4.1 *	19,100	580	18,520	2,900
325				136. *	24,100	2,500	21,600	1,575
331				1.23*	1,850	475	1,375	-
332	2.10	1.20	1.06	2.67	1,900	185	1,715	19
333	9.7	1.05	1.15	11.7	7,680	770	6,910	1,110
341	1.81	1.23	1.10	2.45	9,870	1,270	8,600	147
342	1.70	1.20	1.08	2.20	6,500	550	5,950	387
343	2.20	1.20	1.10	2.91	625	40	585	280
344	2.50	1.05	1.12	2.94	3,170	565	2,605	190
345	1.60	1.20	1.05	2.01	645	60	585	-
351	1.05	1.23	1.06	1.37	8,530	990	7,540	342
352	2.50	1.21	1.08	3.27	11,200	800	10,400	190
353	2.70	1.25	1.08	3.64	13,300	815	12,485	900
361	2.87	1.10	1.15	3.63	24,000	1,020	22,980	935
TOTALS	(1.75)	(1.25)	(1.01)	(2.20)	844,080	58,500	785,580	40,500

* Factor derived in total or in part on comparative basis with similar zones

** Does not include intrazonal trips, which are listed separately.

1980 AVERAGE DAILY TOTAL TRAFFIC INTERCHANGE BETWEEN INTERNAL ZONES

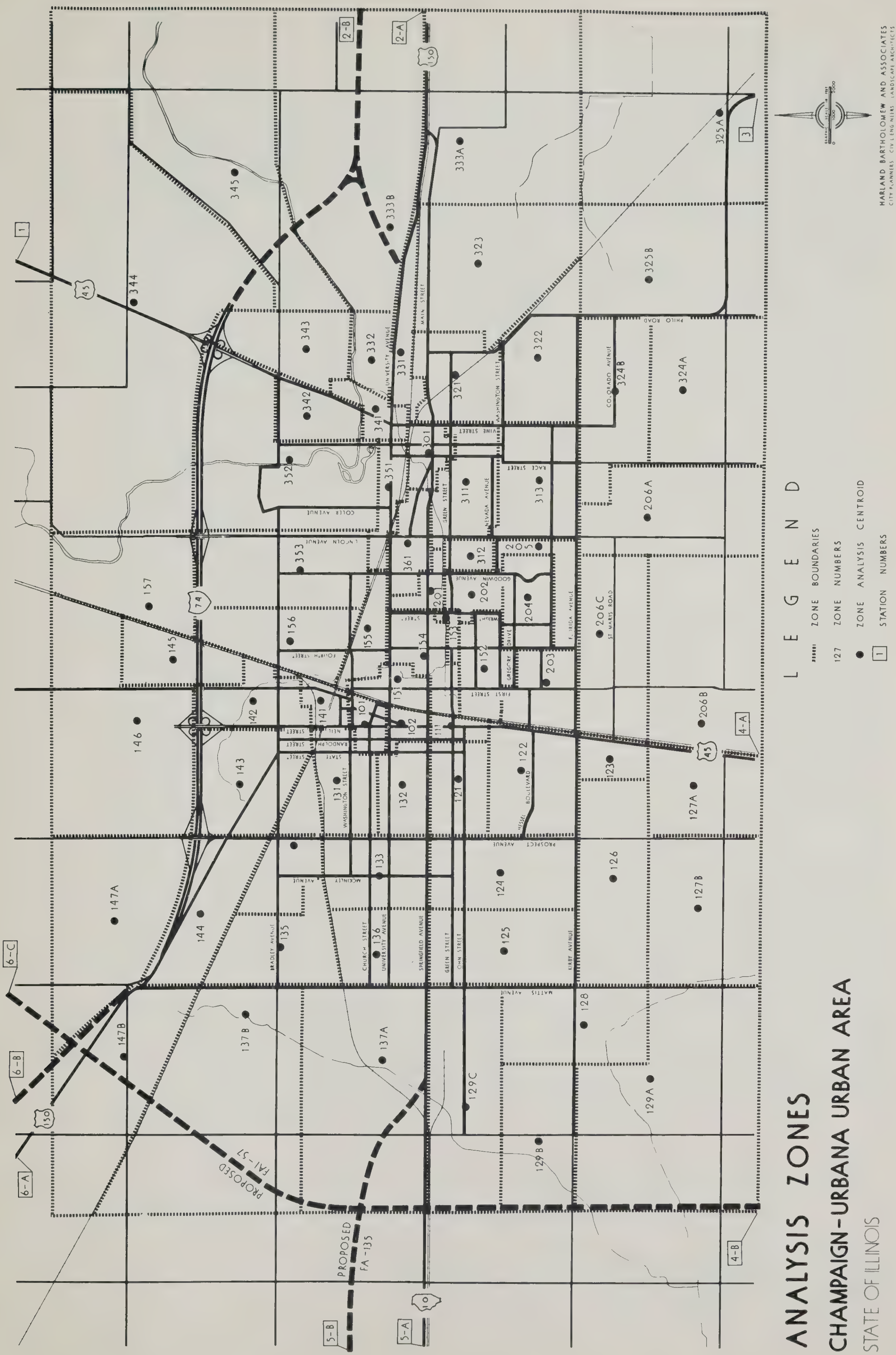
AVERAGE WEEKDAY TOTAL TRAFFIC INTERCHANGE BETWEEN INTERNAL ZONES

Zone Number	101	102	111	121	122	123	124	125	126	127	128	129	131	132	133	134	135	136	137	141	142	143	144	145	146	147	151	152	153	154	155	156	157	201	202	203	204	205	206	301	311	312	313	321	322	323	324	325	331	332	333	341	342	343	344	345	351	352	353	361
101																																																													
102	635																																																										
111	865	295																																																									
121	1125	185	560																																																								
122	1450	320	875	660																																																							
123	195	110	400	35	450																																																						
124	1270	165	485	320	250	175																																																					
125	1070	110	355	280	145	95	680																																																				
126	1050	330	320	375	435	290	310	310																																																			
127	1055	310	290	600	1400	920	600	228	600																																																		
128	350	40	280	190	50	200	240	560	170	330																																																	
129	2000	290	950	900	460	520	360	500	900	2000	1500																																																
131	970	140	320	90	65	-	120	25	85	310	-	880																																															
132	1425	450	570	640	920	260	1280	490	415	373	230	620	310																																														
133	1050	215	460	410	300	150	470	200	290	375	140	1395	200	1000																																													
134	1140	115	245	73	170	240	110	100	210	350	210	250	370	720	270																																												
135	125	20	60	52	40	52	-	90	140	244	62	168	-	75	65	255																																											
136	830	200	300	70	180	70	175	320	125	314	145	2120	100	550	475	240	74																																										
137	1330	200	220	760	1000	155	1190	2000	1950	2070	2390	7175	320	420	770	1230	950	1500																																									
141	640	175	230	84	66	20	100	40	25	62	600	-	165	230	130	370	48	135	-																																								
142	400	10	170	26	110	-	65	-	-	200	42	-	45	95	65	185	85	30	145	300																																							
143	775	210	150	60	150	40	10	125	-	245	15	337	175	350	25	510	-	110	260	300	155																																						
144	700	60	135	69	110	64	68	90	40	240	94	190	110	550	160	645	38	195	630	310	-	175																																					
145	500	50	175	110	115	130	30	13	140	153	-	450	85	200	145	54	35	105	165	330	405	145	60																																				
146	200	20	30	56	-	40	107	-	-	254	-	200	85	-	158	263	57	74	-	21	164	120	67	247																																			
147	355	10	290	630	110	325	80	335	-	470	356	1200	110	126	124	285	645	96	3850	23	108	850	350	640	453																																		
151	430	260	265	130	220	45	55	130	68	84	70	165	110	290	150	275	40	185	50	120	38	140	230	72	-	255																																	
152	1400	245	435	320	290	16	100	180	110	210	200	360	60	275	305	130	-	180	535	240	15	90	66	120	-	162	310																																
153	410	90	115	85	145	60	145	85	210	280	20	485	115	130	46	95	-	125	-	60	9	35	34	-	-	86	180	705																															
154	660	215	385	270	275	130	260	60	115	410	380	900	120	300	145	210	40	160	350	125	85	100	30	200	101	132	335	565	170																														
155	600	390	150	125	260	-	150	130	105	560	43	645	155	475	175	135	9	150	-	180	47	150	38	36	-	98	330	290	80	380																													
156	620	105	190	30	27	-	110	21	110	-	-	-	40	160	7	120	9	27	-	120	70	57	14	68	21	-	70	245	30	200	550																												
157	25	-	-	10	20	-	9	-	-	-	-	-	10	-	10	-	-	-	-	21	37	-	-	20	50	30	-	33	-	35	-	20																											
201	260	55	95	280	290	680	225	245	100	245	40	210	260	390	265	105	46	125	90	55	105	275	180	40	-	53	137	660	200	350	50	85	-																										
202	570	140	135	200	460	270	260	220	65	380	80	745	110	400	85	55	-	67	-	82	140	25	170	175	55	54	125	1550	520	290	275	80	-	650																									
203	635	125	515	105	285	170	60	60	60	15	13	55	140	210	155	110	-	115	400	21	43	33	70	70	57	166	137	650	520	300	265	120	-	1250	1000																								
204	520	130	115	300	510	465	180	300	210	540	274	153	180	540	100	140	52	115	-	40	13	230	70	90	-	208	255	1900	510	490	75	35	-	1200	1000	1340																							
205	290	15	55	30	84	-	-	-	-	-	-	-	20	95	-	24	-	27	-	-	32	46	12	-	-	121	50	400	200	190	65	100	-	290	260	350	450																						
206	800	190	220	160	180	650	670	520	780	1955	270	1125	480	1050	620	275	58	365	500	230	280	240	65	150	59	332	280	2250	1230	900	310	175	-	1800	1400	800	3100	1800																					
301	1040	120	115	85	250	43	190	210	230	890	127	495	90	360	210	115	20	265	33	125	175	100	115	100	134	418	205	445	265	360	300	200	20	320	645	250	570	160	990																				
311	650	140	95	80	100	-	160	45	208	425	16	1190	50	88	135	135	24	85	33	275	-	115	65	112	-	168	165	550	380	200	240	90	-	650	720	240	1250	450	1400	2280																			
312	630	60	55	96	70	-	63	90	-	-	85	200	21	145	-	60	70	75	80	23	-	82	24	73	-	75	27	600	260	240	215	75	-	180	550	200	1020	410	1400	380	720																		
313	640	95	35	80	125	20	210	60	14	-	158	-	-	270	70	24	-	33	-	36	-	34	20	-	-	55	100	400	240	120	145	35	-	325	1150	260	1100	410	1600	1200	1350	475																	
321	570	260	95	77	50	20	23	95	35	270	30	-	60	125	26	20	49	71	100	145	62	90	115	190	78	200	165	280	160	170	67	22	20	370	255	120	350	165	820	1705	1010	128	435																
322	500	130	60	10	80	69	70	-	70	315	-	460	25	350	100	18	20	30	25	48	46	35	-	61	-	-	110	52	100	110	220	-	-	750	450	120	665	50	910	1150	555	245	510	600															
323	235	150	150	70	60	140	45	40	250	800	350	345	-	350	-	-	48	340	74	-	105	325	-	100	100	50	140	600	50	-	-	75	-	200	100	-	400	-	315	800	-	-	800	1160	410														
324	600	75	-	70	20	-	-	38	125	82	28	200	-	190	106	128	17	24	150	180	350	30	20	-	105	77	-	225	50	70	85	25	-	600	950	60	600	310	520	900	870	570	590	160	450	1115													
325	100	60	90	60	150	150	50	50	103	990	18	275	-	-	120	43	-	-	120	66	10	110	-	-	-	50	70	525	-	50	70	65	-	150	100	300	100	300	4900	690	1640	540	1040	850	1100	760	2430												
331		20	-	-	-	-	-	-	35	-	-	-	-	20	60	-	-	10	-	-	12	-	-	14	198	-	15	15	10	-	-	-	-	75	15	50	-	-	-	175	49	-	27	60	24	-	140	-											
332	-	20	75	20	30	-	30	36	-	-	-	-		20	-	-	-	-	-	35	-	45	-	-	-	-	14	15	-	45	35	30	-	-	-	35	50	30	-	240	-	-	-	14	-	275	-	-	37										
333	447	50	270	80	25	-	40	50	-	-	-	50	30	75	82	200	-	-	71	235	310	120	-	-	-	40	-	-	-	60	-	-	-	175	200	70	-	-	300	600	-	-	-	200	150	430	367	400	156	-									
341	180	45	10	90	70	340	75	132	96	140	75	-	100	42	39	125	-	-	-	34	37	300	75	93	27	288	50	235	85	90	180	130	-	70	61	85	400	165	1400	350	280	77	230	210	60	480	236	67	52	37	15								
342	170	-	40	30	23	-	47	23	35	200	81	275	85	125	48	36	12	21	-	105	-	-	65	27	-	195	10	55	-	95	24	45	-	200	64	-	260	51	490	700	570	-	81	65	160	87	57	57	13	-	40	320							
343	20		-	-	17	-	-	-	-	-	-	-	33	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	44	-	-	-	-	-	-	27	-	50	-	-	-	-	40	-	-	67	-	-	45	-	17						
344	20	20	-	-	75	-	78	-	-	227	55	-	-	150	-	-	59	29	88	-	-	135	-	20	-	40	-	120	-	-	-	-	-	15	-	-	15	75	170	250	37	135	66	15	-	128	183	55	7	-	20	17	120	105					
345	7	25	-	-	75	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	50	-	15	-	85	15	-	35	-	-	-	-	15	150	-	-	-	-	12	-	-	-	-	-	50	-	-	-	-				
351	235	150	30	115	55	35	-	11	54	295	260	-	5	145	55	49	18	8	-	94	37	39	85	31	-	242	30	100	20	80	195	60	-	350	140	250	70	25	150	600	410	185	235	210	150	295	590	-	29	48	95	125	130	-	94	-			
352	130	60	45	42	160	-	-	34	24	100	340	200	30	190	53	8	-	95	550	19	-	260	100	89	94	358	140	165	45	220	140	15	-	140	140	100	60	80	220	970	690	120	420	40	110	-	245	165	-	170	240	200	150	-	-	32	340		
353	300	90	45		130	-	72	-	130	150	15	220	-	170	195	30	-	27	-	180	44	260	37	196	-	150	360	410	100	90	800	1100	30	70	100	60	175	57	460	500	240	314	400	50	117	220	290	200	50	135	290	195	180	210	73	-	485	325		
361	375	100	210	120	180	-	90	110	175	150	40	310	-	500	70	245	35	100	600	220	-	150	380	400	200	690	450	470	350	700	850	200	65	640	1110	250	1000	300	1500	1500	720	650	380	440	440	246	600	300	60	160	690	200	150	30	180	50	530	800	600	

TABLE E

1980 AVERAGE DAILY TOTAL TRAFFIC INTERCHANGE BETWEEN STATIONS AND INTERNAL ZONES

	STATION												
ZONE	1	2a	2b	3	4a	4b	5a	5b	6a	6b	6c	7	8
101	469	147	348	187	412	510	185	425	190	274	278	257	1008
102	82	30	70	42	173	210	62	140	58	106	88	103	216
111	51	28	62	31	137	160	33	80	47	82	79	35	115
121	32	18	43	18	76	93	24	56	40	62	59	39	55
122	70	28	66	28	163	190	35	80	46	79	68	37	170
123	30	24	56	14	160	186	17	41	28	36	56	24	41
124	16	13	33	8	52	62	32	74	20	35	32	31	62
125	24	15	34	20	65	78	42	100	19	27	20	25	71
126	45	12	31	-	98	120	38	69	48	55	51	21	49
127	70	29	69	213	318	390	35	74	70	173	131	89	109
128	53	12	26	48	65	78	35	81	31	65	40	40	146
129	57	13	30	95	306	372	300	616	113	197	204	137	130
131	30	14	33	24	46	55	19	43	26	47	41	19	123
132	83	37	88	47	126	155	77	177	59	130	103	60	198
133	37	16	39	26	80	100	37	85	42	71	60	48	159
134	26	29	68	10	61	75	25	60	50	84	72	41	159
135	23	14	34	16	82	101	30	81	54	116	90	43	66
136	29	20	46	23	50	60	63	147	39	69	60	55	99
137	27	38	90	54	478	610	296	760	150	298	366	57	76
141	29	32	73	17	65	79	41	96	59	103	90	35	226
142	6	12	30	9	36	44	7	16	24	40	35	16	100
143	24	32	75	31	65	79	20	48	43	71	60	36	146
144	11	16	38	49	35	43	15	33	50	86	74	71	169
145	55	60	139	58	78	95	36	82	70	121	106	16	284
146	4	40	93	6	85	100	46	110	39	94	72	15	251
147	45	18	45	31	47	135	32	75	401	272	430	596	173
151	52	24	57	29	72	88	21	50	40	43	22	25	127
152	99	48	110	42	145	180	33	78	170	177	85	58	-
153	86	20	49	29	60	73	20	46	53	56	28	13	37
154	173	45	104	81	120	144	34	78	100	107	55	65	104
155	137	46	107	71	90	110	50	115	70	85	66	30	113
156	74	50	107	38	35	43	17	40	30	56	33	33	174
157	5	4	8	9	19	23	-	-	4	5	4	7	12
201	55	38	70	64	77	93	24	55	20	35	30	10	24
202	72	50	105	50	73	88	31	70	49	73	55	37	37
203	31	30	64	53	86	100	17	41	52	74	55	26	16
204	39	21	43	53	71	87	33	76	100	133	99	30	30
205	33	10	24	11	23	28	12	27	22	30	22	7	1
206	99	36	84	51	170	105	76	177	80	107	100	59	121
301	322	108	251	201	108	130	57	140	77	82	40	47	87
311	208	58	135	77	67	82	33	74	60	114	34	33	35
312	80	30	67	30	52	65	10	24	33	63	20	30	11
313	82	30	67	49	46	55	19	43	23	41	12	19	14
321	118	58	130	91	36	44	23	53	42	80	23	20	37
322	77	22	50	80	32	40	13	30	28	50	15	7	21
323	255	126	280	410	95	110	12	29	32	62	20	10	79
324	103	20	50	53	36	44	10	25	47	85	25	38	44
325	342	171	343	1031	31	37	34	80	40	60	9	29	293
331	48	46	100	42	28	34	20	46	22	42	13	13	21
332	17	14	34	31	-	-	12	29	10	23	10	-	5
333	135	101	228	122	40	47	17	17	21	39	3	-	-
341	261	94	219	170	72	88	27	70	51	95	30	16	77
342	145	27	75	50	40	45	20	47	24	44	13	-	20
343	12	2	5	-	6	6	-	4	2	3	-	-	-
344	257	24	60	10	32	43	14	34	26	49	14	-	2
345	28	3	7	2	4	6	-	5	-	3	-	2	-
351	139	54	130	114	81	100	34	78	38	88	35	26	73
352	82	25	70	85	38	45	10	21	83	150	45	100	46
353	212	28	80	41	63	80	28	65	20	45	18	36	99
361	164	63	155	85	63	77	40	91	55	75	50	38	64
TOTALS	5470	2273	5227	4460	5370	6520	2383	5507	3340	5067	3848	2810	6225



ANALYSIS ZONES

CHAMPAIGN-URBANA URBAN AREA

STATE OF ILLINOIS

TABLE F

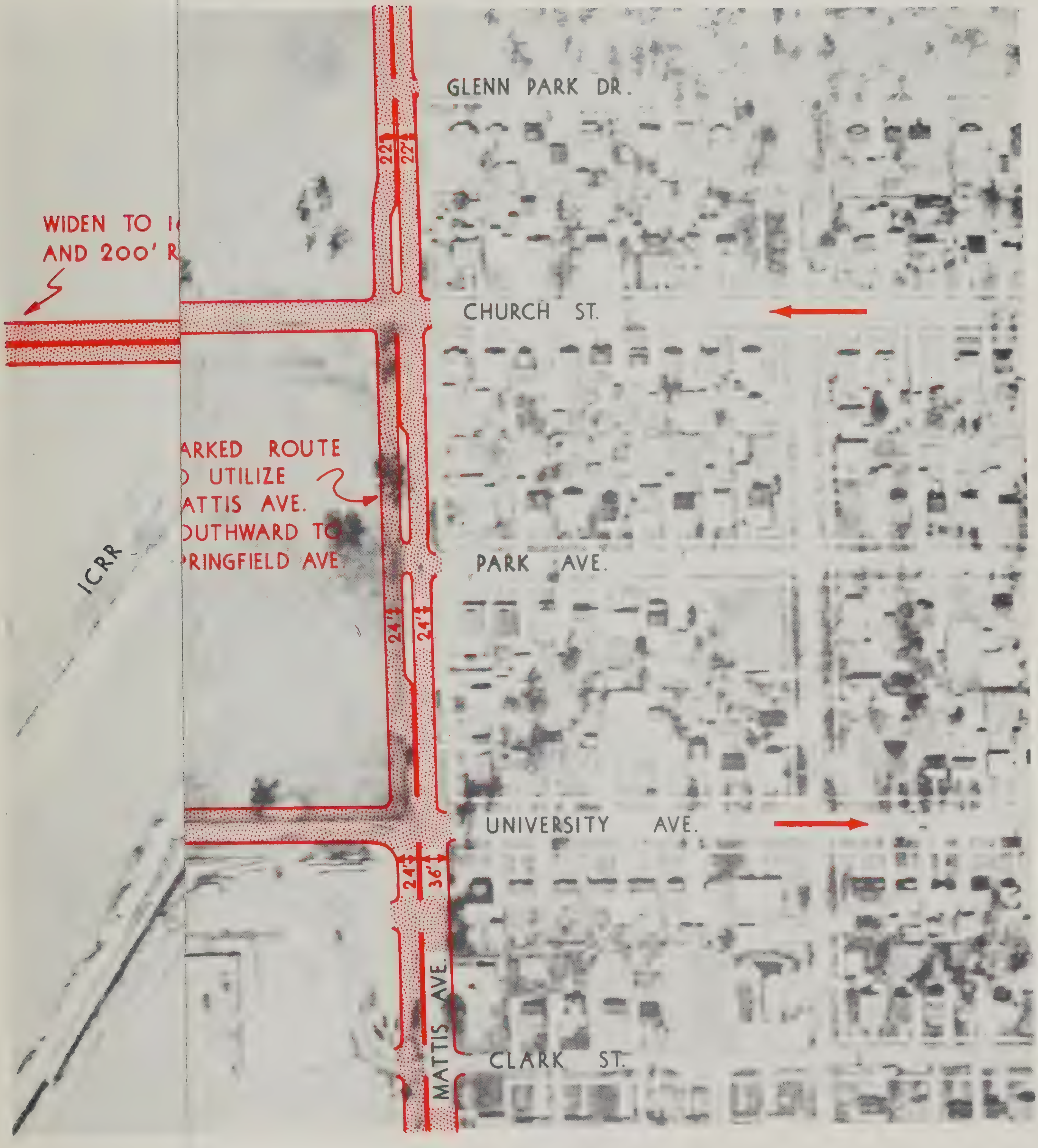
COMPARISON OF MAJOR STREET ALTERNATIVES

CHAMPAIGN-URBANA URBAN AREA

Item	Street	Cross-Section	Continuity	Existing ROW	Existing Pavement Width	Extension		Location[1]	Distribution[2]
						To 1980	Beyond 1980		
1	Shapland	A	x	x	-	*	*	*	*
2	St. Mary's - Colorado	D	-	x	-	x	x	*	*
	St. Mary's (Alternate)	D	-	-	-	x	x	x	x
3	Kirby-Florida	A	*	-	-	*	x	*	*
	Kirby-Florida	B	*	*	x	*	x	*	*
4	Hessel-Pennsylvania	D	-	*	x	x	-	*	x
5	John	D	-	x	-	-	-	-	x
6	Nevada-Washington	D	-	-	-	x	*	x	x
7	Gregory Drive	D	x	x	-	x	-	-	-
8	Armory	D	-	x	-	-	-	-	-
9	Green	D	*	-	-	*	-	*	*
10	Springfield-Main	B, D	*	*	x	*	*	*	x
11	University	B, D	*	*	*	*	*	*	x
12	Church	D	-	*	-	x	-	*	x
13	Washington	D	x	x	x	*	-	x	*
14	Bradley	B	*	x	-	*	*	*	*
15	Bloomington	D	x	-	-	-	-	*	*
16	Mattis	A	*	x	-	*	*	*	*
	Mattis	B	*	*	-	*	*	*	*
17	McKinley	D	x	*	-	x	-	-	x
18	Prospect	A	*	-	-	*	*	*	*
	Prospect	B	*	*	x	*	*	*	*
	Prospect	D	*	*	x	*	*	*	*
19	Randolph & State Couple	D	x	*	x	x	-	*	*
20	Neil	B, D	*	*	x	*	*	x	x
21	First	D	x	*	x	x	x	*	*
22	Fourth	B	x	x	-	*	-	*	*
23	Sixth	D	x	*	x	x	x	*	*
24	Wright	D	-	*	*	-	-	-	x
25	Goodwin	C, D	-	x	-	x	-	x	*
26	Lincoln	B	*	-	-	*	x	*	*
	Lincoln	D	*	x	-	*	x	*	*
27	Race	D	-	-	-	x	x	x	x
28	Vine	B	x	-	-	*	*	x	*
	Vine	D	x	x	x	*	*	x	*

1. Location relates to splitting of neighborhoods, runs through CBD, etc.
2. Distribution relates to access to parking lots, other major streets, truck terminals, industry, etc.

* Good
- Bad
x Indifferent



GRAPHIC SCALE IN FEET
0 200 400

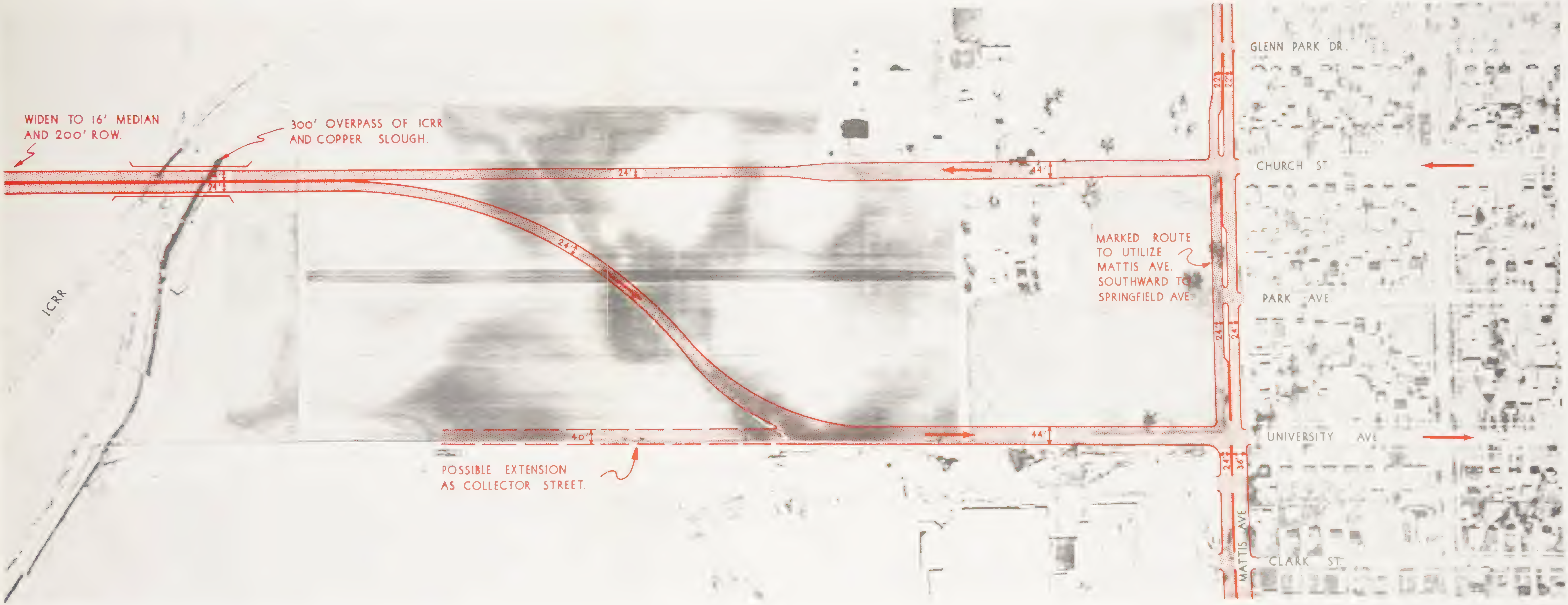
RECONNAIS

DECATU

CHAMPAIG

STATE OF IL

HARLAND BARTHOLOMEW AND ASSOCIATES
CITY PLANNERS, CIVIL ENGINEERS, LANDSCAPE ARCHITECTS
SAINT LOUIS, JUNE 1960 MISSOURI

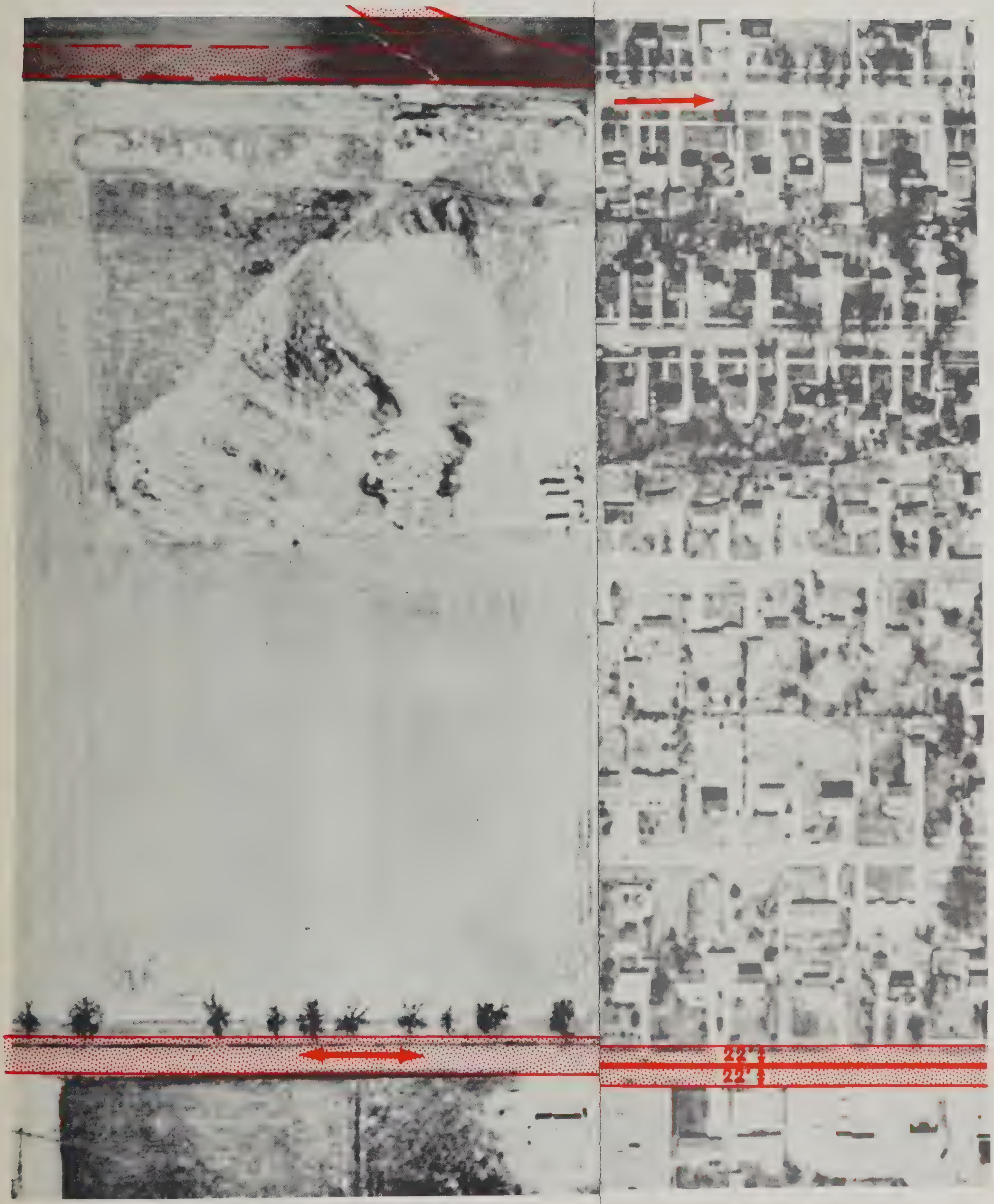

WIDEN TO 16' MEDIAN AND 200' ROW.
300' OVERPASS OF ICRR AND COPPER SLOUGH.
24'
24'
24'
24'
ICRR
GLENN PARK DR.
22'
22'
CHURCH ST.
44'
MARKED ROUTE TO UTILIZE MATTIS AVE. SOUTHWARD TO SPRINGFIELD AVE.
PARK AVE.
24'
24'
UNIVERSITY AVE
44'
40'
24'
36'
POSSIBLE EXTENSION AS COLLECTOR STREET.
MATTIS AVE.
CLARK ST.
N
GRAPHIC SCALE IN FEET
0
200
400

RECONNAISSANCE MAP A

DECATUR EXPRESSWAY SPUR

CHAMPAIGN-URBANA URBAN AREA
STATE OF ILLINOIS

HARLAND BARTHOLOMEW AND ASSOCIATES
CITY PLANNERS, CIVIL ENGINEERS, LANDSCAPE ARCHITECTS
SAINT LOUIS, JUNE 1960 MISSOURI



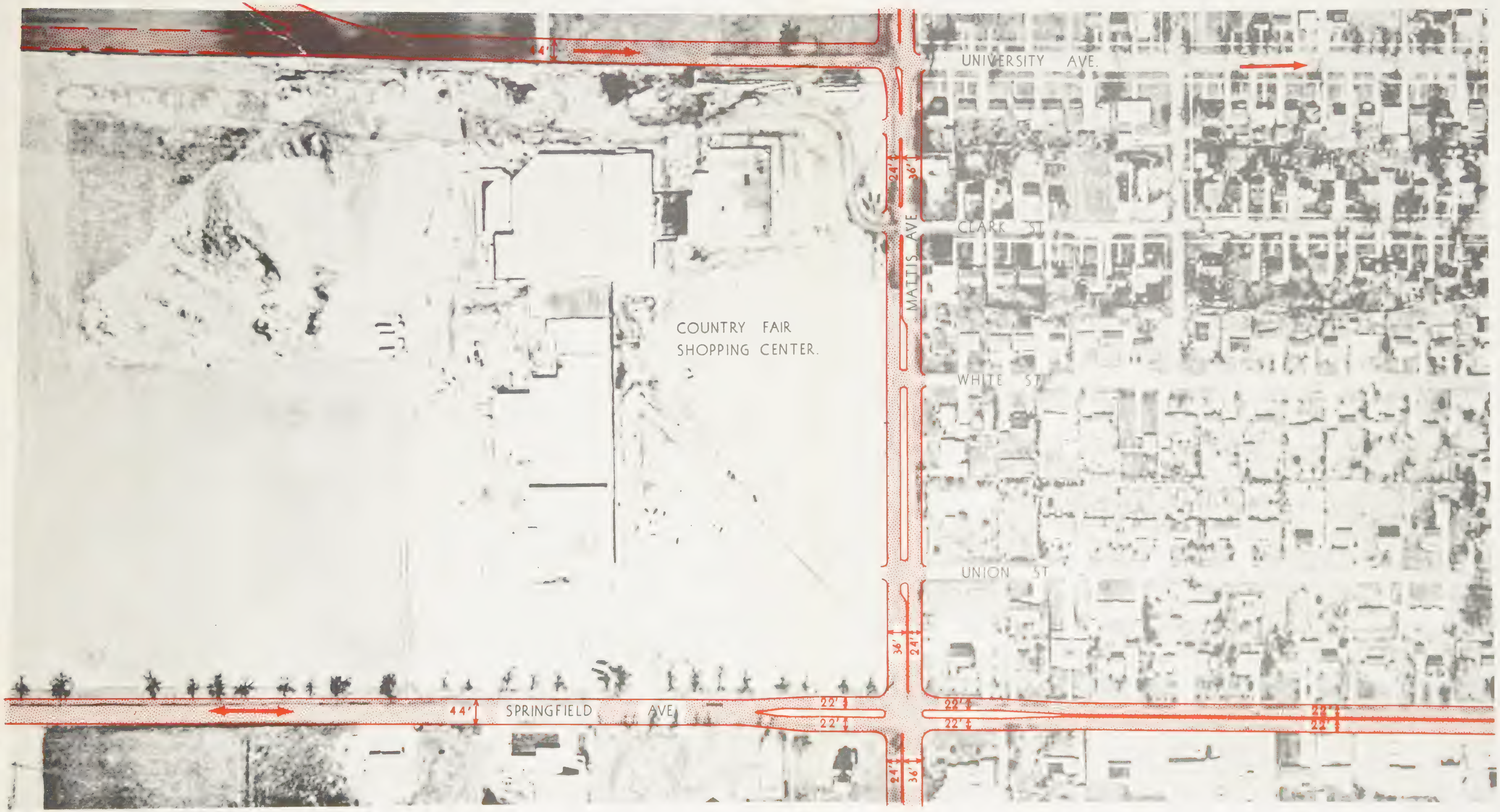
RECONNAISSANCE MAP B

SPRINGFIELD AVE. AND MA

CHAMPAIGN—URBANA URBAN ARE
STATE OF ILLINOIS

HIC SCALE IN FEET
200 400

HOLOMEW AND ASSOCIATES
L ENGINEERS, LANDSCAPE ARCHITECTS
JUNE 1960 MISSOURI



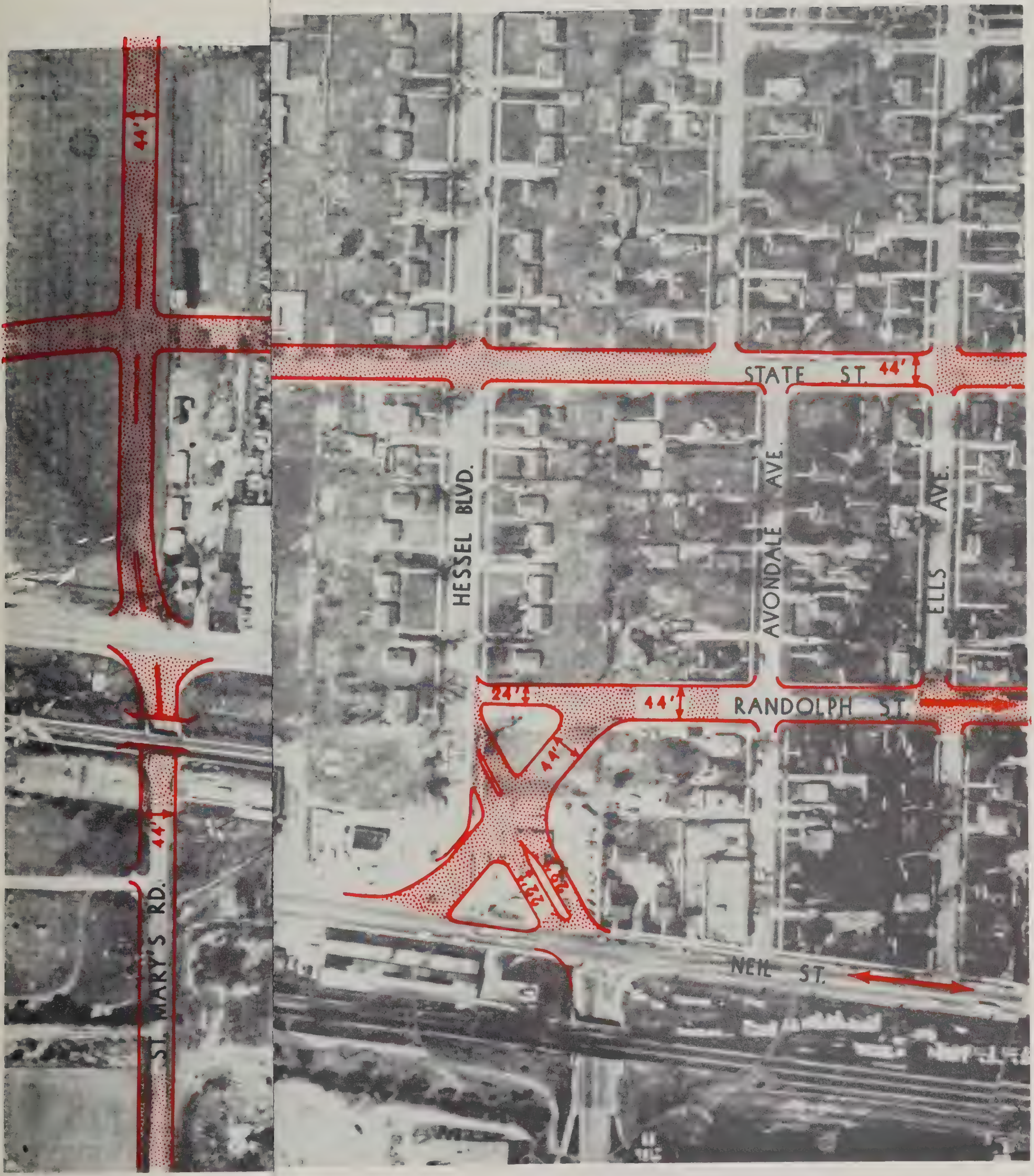
RECONNAISSANCE MAP B

SPRINGFIELD AVE. AND MATTIS AVE.

CHAMPAIGN—URBANA URBAN AREA
STATE OF ILLINOIS

GRAPHIC SCALE IN FEET
0 200 400

HARLAND BARTHOLOMEW AND ASSOCIATES
CITY PLANNERS, CIVIL ENGINEERS, LANDSCAPE ARCHITECTS
SAINT LOUIS, JUNE 1960 MISSOURI



GRAPHIC SCALE IN FEET
0 200 400

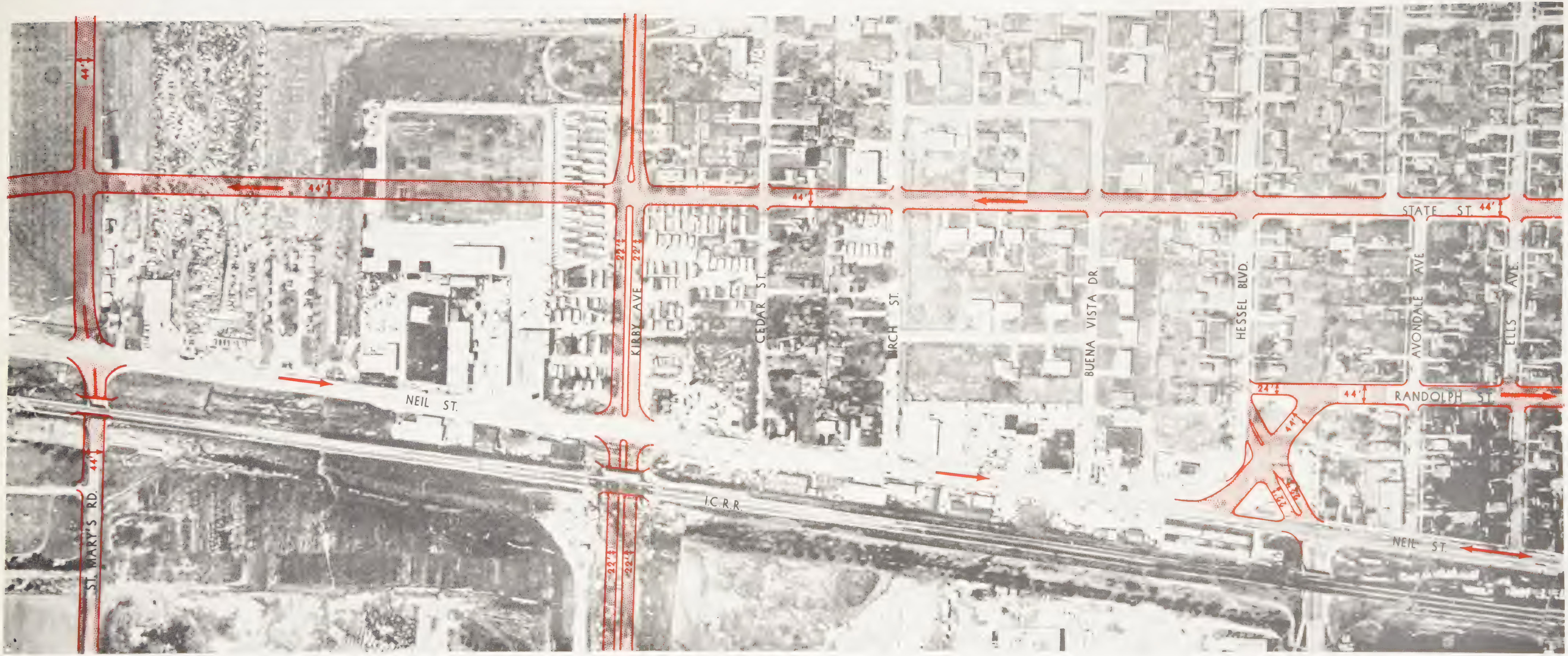
RECONNAISSANCE

STATE ST. AN

CHAMPAIGN—URE

STATE OF ILLINOIS

HARLAND BARTHOLOMEW AND ASSOCIATES
CITY PLANNERS, CIVIL ENGINEERS, LANDSCAPE ARCHITECTS
SAINT LOUIS, JUNE 1960 MISSOURI



RECONNAISSANCE MAP C

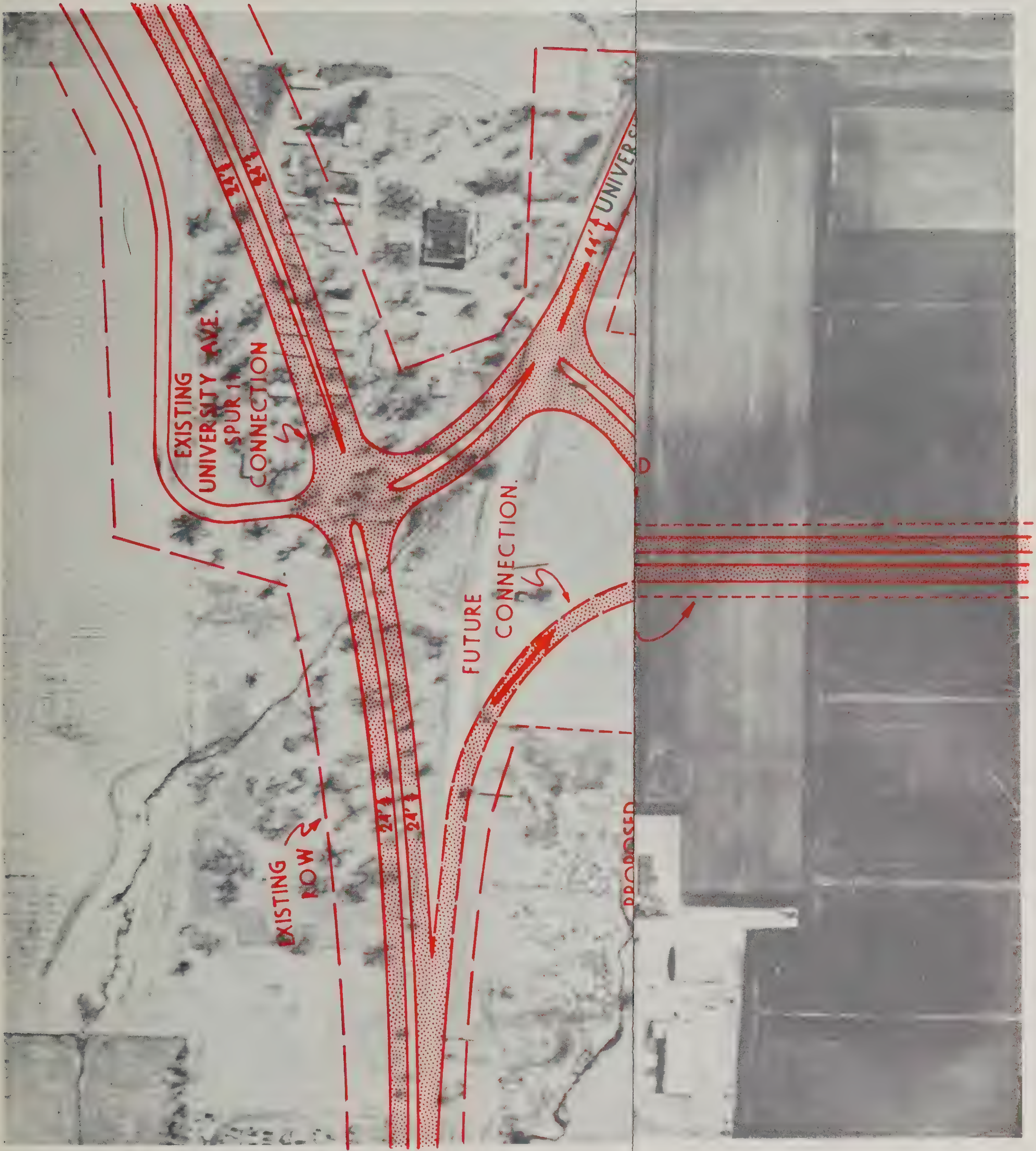
STATE ST. AND RANDOLPH ST.

CHAMPAIGN–URBANA URBAN AREA
STATE OF ILLINOIS

N

GRAPHIC SCALE IN FEET
0 200 400

HARLAND BARTHOLOMEW AND ASSOCIATES
CITY PLANNERS, CIVIL ENGINEERS, LANDSCAPE ARCHITECTS
SAINT LOUIS, JUNE 1960 MISSOURI



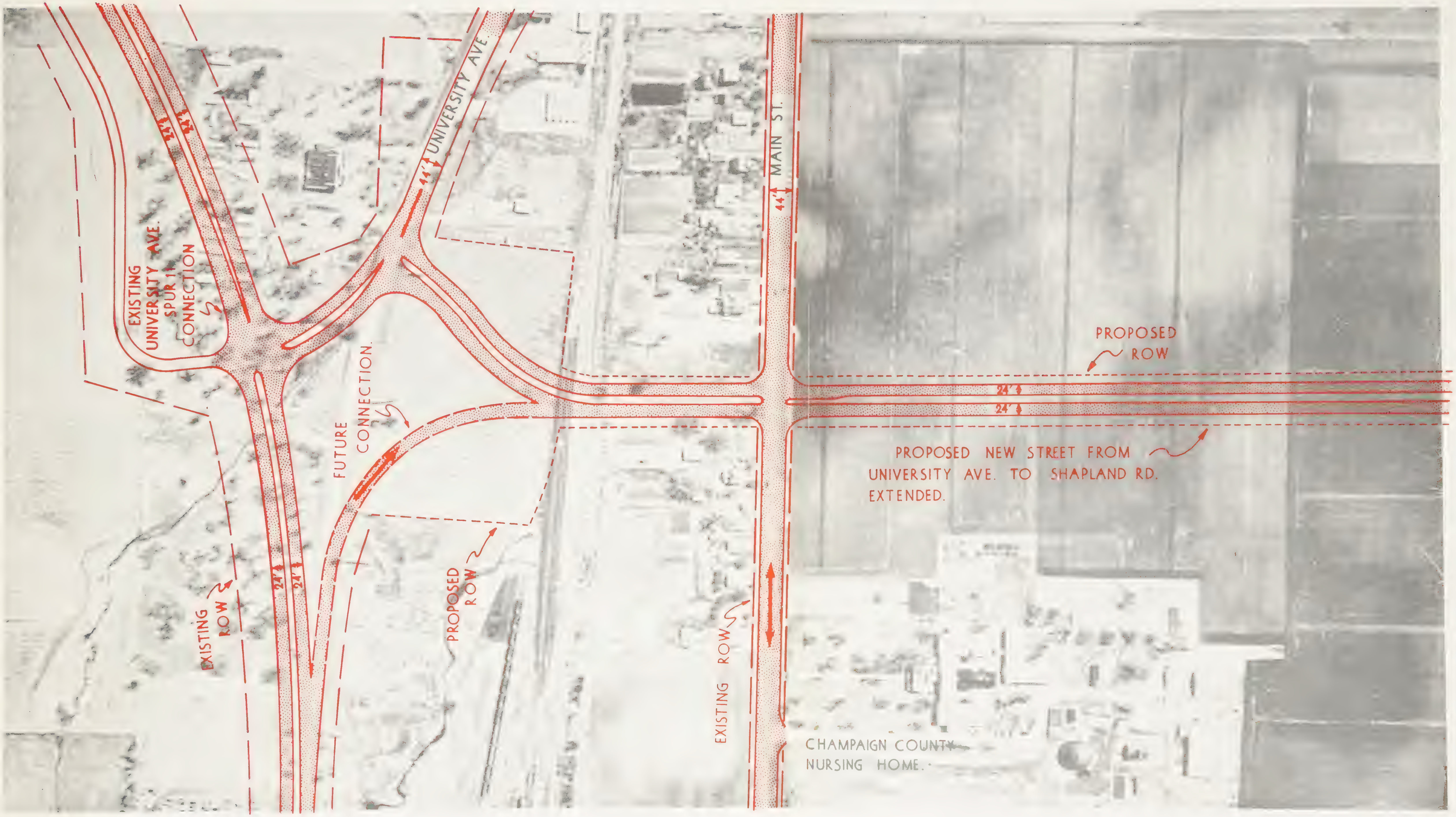
RECONNAISSANCE MAP D

UNIVERSITY AVE. — PROPOSED

CHAMPAIGN–URBANA URBAN AREA
STATE OF ILLINOIS

PHIC SCALE IN FEET
200 400

THOLOMEW AND ASSOCIATES
VIL ENGINEERS, LANDSCAPE ARCHITECTS
JUNE 1960 MISSOURI


UNIVERSITY AVE.
44'
24'
24'
MAIN ST.
44'
EXISTING UNIVERSITY AVE. SPUR 1 CONNECTION
FUTURE CONNECTION
PROPOSED ROW
24'
24'
PROPOSED NEW STREET FROM UNIVERSITY AVE. TO SHAPLAND RD. EXTENDED.
EXISTING ROW
24'
24'
PROPOSED ROW
EXISTING ROW
CHAMPAIGN COUNTY NURSING HOME.

RECONNAISSANCE MAP D

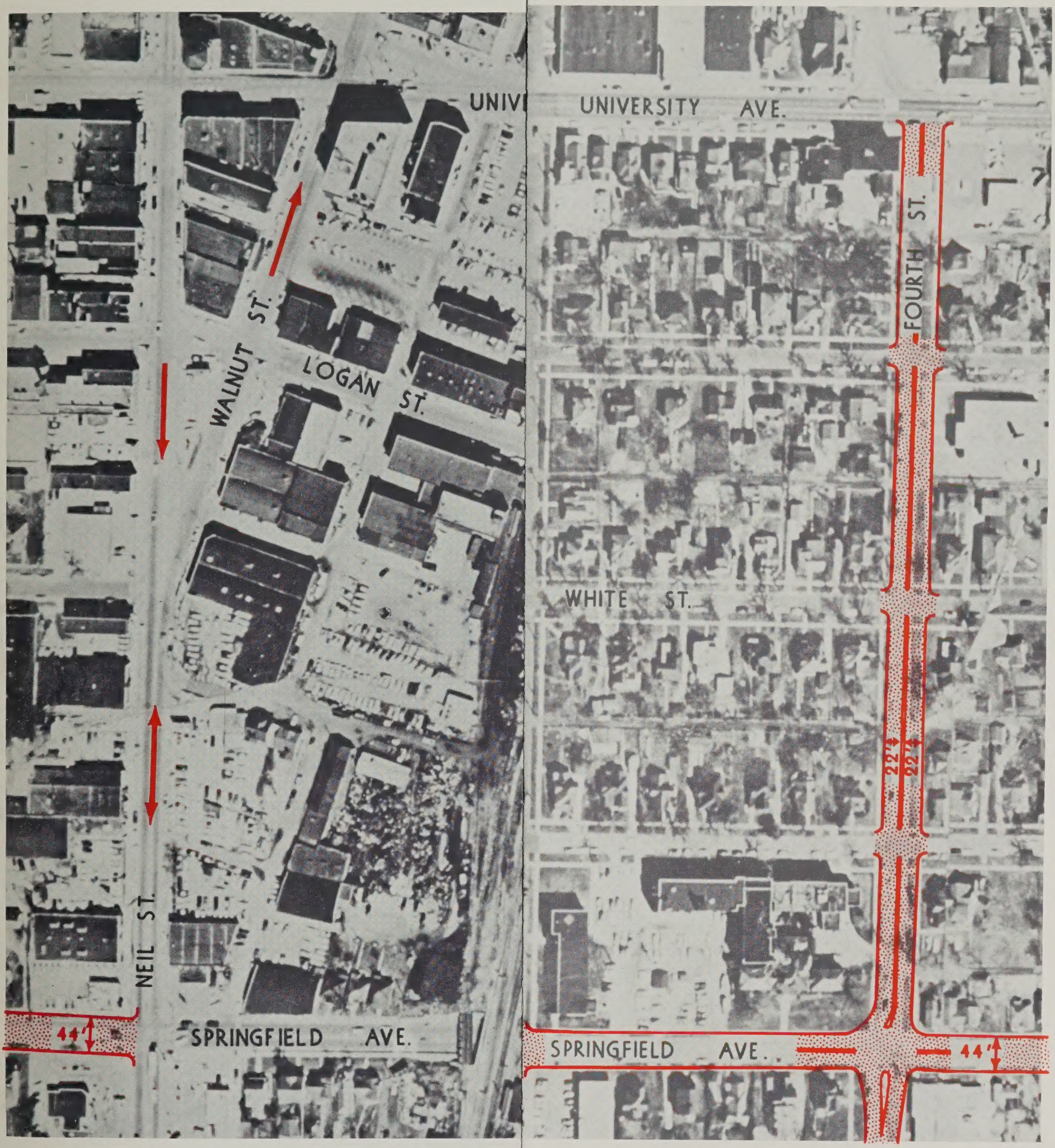
UNIVERSITY AVE. — PROPOSED NEW STREET

CHAMPAIGN–URBANA URBAN AREA
STATE OF ILLINOIS

N

GRAPHIC SCALE IN FEET
0 200 400

HARLAND BARTHOLOMEW AND ASSOCIATES
CITY PLANNERS, CIVIL ENGINEERS, LANDSCAPE ARCHITECTS
SAINT LOUIS, JUNE 1960 MISSOURI



GRAPHIC SCALE IN FEET
0 200 400

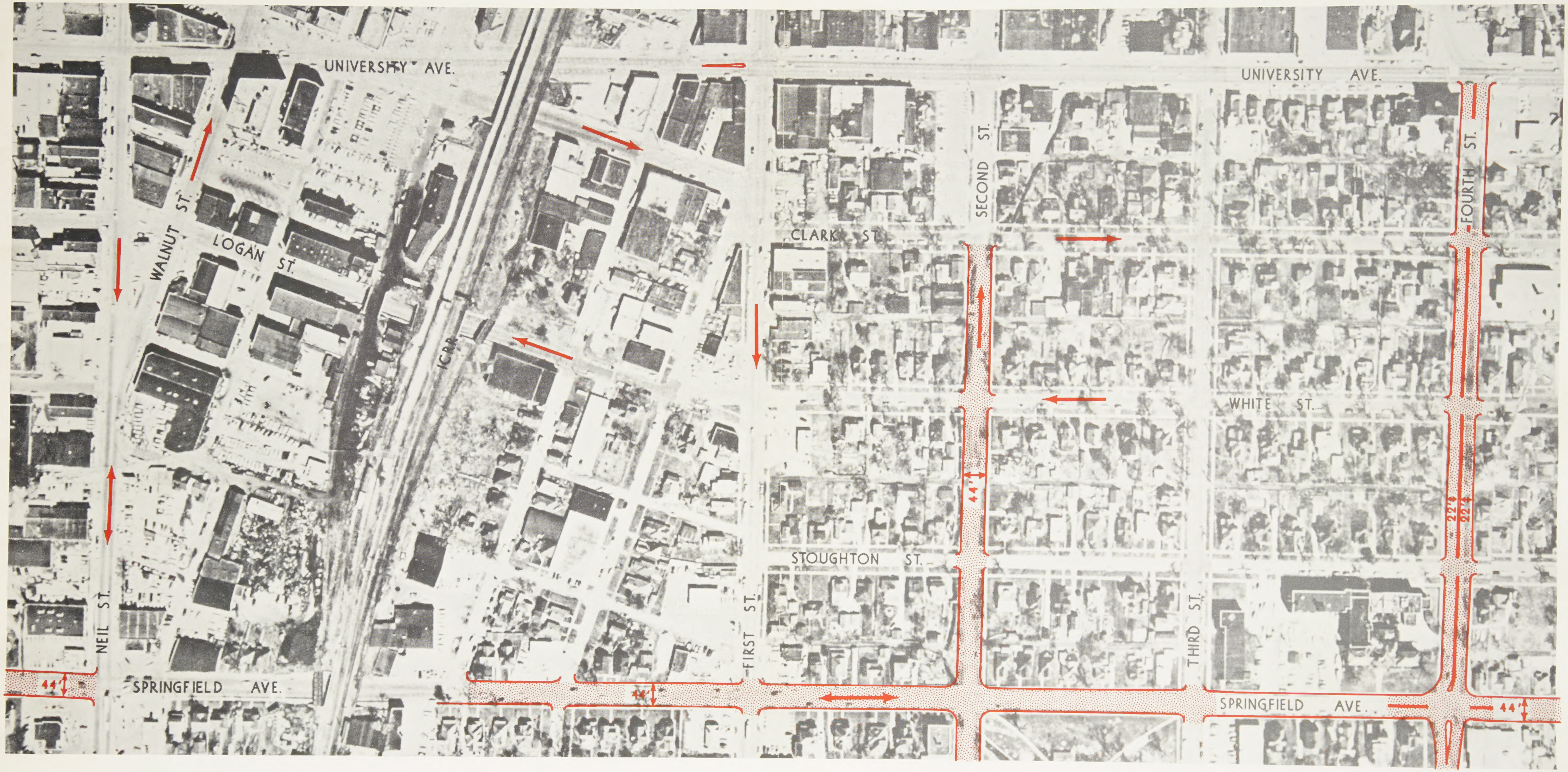
RECONNAISSANCE MAP E

SPRINGFIELD AVE. AND F

CHAMPAIGN – URBANA URBAN

STATE OF ILLINOIS

ND BARTHOLOMEW AND ASSOCIATES
ANNERS, CIVIL ENGINEERS, LANDSCAPE ARCHITECTS
LOUIS, JUNE 1960 MISSOURI



RECONNAISSANCE MAP E

SPRINGFIELD AVE. AND FOURTH ST.

CHAMPAIGN – URBANA URBAN AREA

STATE OF ILLINOIS

N

GRAPHIC SCALE IN FEET
0 200 400

HARLAND BARTHOLOMEW AND ASSOCIATES
CITY PLANNERS, CIVIL ENGINEERS, LANDSCAPE ARCHITECTS
SAINT LOUIS, JUNE 1960 MISSOURI

UNIVERSITY OF ILLINOIS-URBANA
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